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ABSTRACT

This manual describes and illustrates ED QUEST (Quick Environmental Scanning Technique), an educational planning model designed to identify emerging issues and events which portend threats and opportunities to colleges and universities, to analyze the probable impact of these variables on the organization, and to facilitate the development of appropriate organizational strategies. After section 1 discusses key elements in strategic management, section 2 provides a description of a hypothetical public two-year college used in a simulation of the application of ED QUEST. Section 3 presents an overview of development, underlying assumptions, and major activities of the ED QUEST process. The next sections detail the steps involved in each of the major activities: (1) preparing for the ED QUEST process; (2) defining the nature of the organization, including elements of the mission, indicators of institutional performance, and strengths and weaknesses; (3) identifying universe of critical trends and future events through brainstorming or the Delphi Survey; (4) selecting high impact/high probability events; (5) assessing the interrelationships between events; (6) assessing the impact of critical trends and high probability/high impact events on the institution; (7) developing possible scenarios of possible futures faced by the college; (8) analyzing the scenarios; (9) developing strategic options; (10) incorporating strategic options into strategic management; and (11) additional steps, such as establishing the program structure, gaining organizational acceptance, developing a scanning taxonomy, and identifying and tapping information resources. Appendices contain "Prospects for the Future: Some Possible Trends Which May Impact Education," a notebook of articles and information suggesting possible future events; ED QUEST forms; a Delphi questionnaire; and a scenario for the future of the hypothetical college. (RO)

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ED QUEST: A Process for Linking Environmental Changes with Strategic Management

PRESENTED BY

THOMAS V. MECCA AND JAMES L. MORRISON

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Piedmont Technical College

ED QUEST: A PROCESS FOR LINKING ENVIRONMENTAL CHANGES TO STRATEGIC MANAGEMENT

presented by

Thomas V. Mecca and James L. Morrison

at

AACJC

April 12-15, 1986
Orlando, Florida

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EDUCATIONAL QUEST

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Thomas V. Mecca, Piedmont Technical College
James L. Morrison, UNC-Chapel Hill

EDUCATIONAL QUEST

LINKING ENVIRONMENTAL CHANGES TO STRATEGIC MANAGEMENT

In today's American society, the external environment of institutions of higher education may be characterized by change and turbulence. For example, we have witnessed: (1) changing attitudes in higher education of the general public and client groups; (2) changes in fiscal and accountability policies towards higher education; (3) shifts in the directions of agencies regulating and supervising education; and (4) scientific and technological innovations including developments in computers and telecommunications which are revolutionizing instruction and management.

One of the critical issues college administrators must address is the way in which they analyze their institutional environments and formulate the strategic policies necessary for their institutions to adapt to all of their environments, internal and external. Without knowledge of these environments, it is difficult for administrators to develop appropriate strategies to achieve organizational goals. The formulation and selection of strategic policies require an accurate assessment of the opportunities and threats the environment poses for the institution. It is important, therefore, to be able to identify and forecast critical trends, events and their interrelationships which enable us to develop images of possible future environments within which the institution may function. That is, well developed scenarios of alternative futures illustrate unique configurations of trends and possible future events with which the institution may have to contend, thereby providing the basis for selecting strategic options.

Most educational planning models, however, are weak in identifying future events and assessing their impact on education. At best, they assume a surprise-free future in which present trends continue unabated. Such models implicitly assume that the interrelationships between and among social, economic, political, and technological forces will remain

essentially the same. We know, however, that this is not true, and the further we go out into the future, the less it will be true. What is needed is a model which enables us to detect signals of change (i.e., emerging issues or events which may make the future different from the past) and link this information to the organization's strategic management.

ED QUEST (Quick Environmental Scanning Technique) is a process designed to identify emerging issues and events which portend threats and opportunities to colleges and universities, analyze the probable impact of these variables on the organization, and facilitate the development of appropriate organizational strategies. Unlike more complex methods for analyzing socio-economic and political environments, ED QUEST can be quickly and easily implemented. Moreover, it does not require that the institution spend scarce financial resources on specialized technical services or personnel. In its simplified form, the process consists of divergent thinking exercises in which assumptions about the future of the environment are examined and tested. The results of this process are then applied systematically to the formulation of organizational strategies. Upon completion, the institution will have (1) an initial data bank of trends, emerging issues, and events to monitor and (2) courses of action which could be pursued by the organization in adapting to the changing environment. This information provides the basis for on-going strategic management.

The purpose of this manual is to describe conceptually, and through practical illustrations, each step of the ED QUEST process. In Part One we describe the essential elements of the process including the criteria for establishing the information for use by that team, identifying and analyzing critical trends and events, developing alternative scenarios, identify strategic options, and selecting options which should be incorporated into the strategic management process. In Part Two we illustrate how a planning team at a fictious two-year college, Utopia County Community College, used the ED QUEST process in developing strategic options for that institution. In Part Three we discuss how a college or university could institutionalize an on-going environmental scanning process in order to systematically inform the strategic management program.

PART ONE

THE ED QUEST PROCESS

OVERVIEW

Burt Nanus of the Center for Futures Research at the University of Southern California developed the original QUEST model in 1979 in response to the need to focus management's attention on critical trends and events that could affect their organization's future. QUEST was designed to provide the grist for strategic planning quickly and inexpensively, that is, to provide forecasts of events and trends, an indication of the interrelationships among them (and hence the opportunities for policy intervention), and scenarios that synthesize these results into coherent alternative futures. It is a face-to-face group process technique, accomplished through a series of several day-long meetings. The objective is to produce a comprehensive analysis of the external environment and an assessment of an organization's strategic options.

ED QUEST was adapted from QUEST by the Institute for Future Systems Research to assist staff members in educational organizations in incorporating futures research techniques into their long-range planning processes. The primary aim of ED QUEST is to assist educational planners in identifying the driving forces at work in their organization's environment, the important and likely changes that these forces might bring about for that organization, and the strategies that the organization could implement in response to the anticipated impact of these changes. A characteristic of ED QUEST is that it tailors the product of the environmental scanning process to the user's organization, and does not rely on a model of the organization's environment based solely on trends and events selected by persons outside the organization. By involving the organization's top decision makers in identifying and evaluating critical trends and events, it virtually insures that the results will be used in strategic decision-making. Too, since ED QUEST is participatory in nature, it does not depend upon any single individual's view of the future.

Assumptions

ED QUEST is based on three fundamental assumptions. First, it is assumed that the forces of environmental trends and events mold the organizational life of colleges and universities. These forces affect the choice of strategies for accomplishing the institutional mission as well as the nature and content of that mission. Second, it is assumed that the institution's chief decision-makers possess individual perceptions of the forces shaping the external environment. Collectively, these perceptions represent the organizational view of the environment and determine the organizational response to that environment. Third, it is assumed that the effects of environmental trends and emerging issues can be anticipated; and, therefore, provide crucial information for the institution's strategic management.

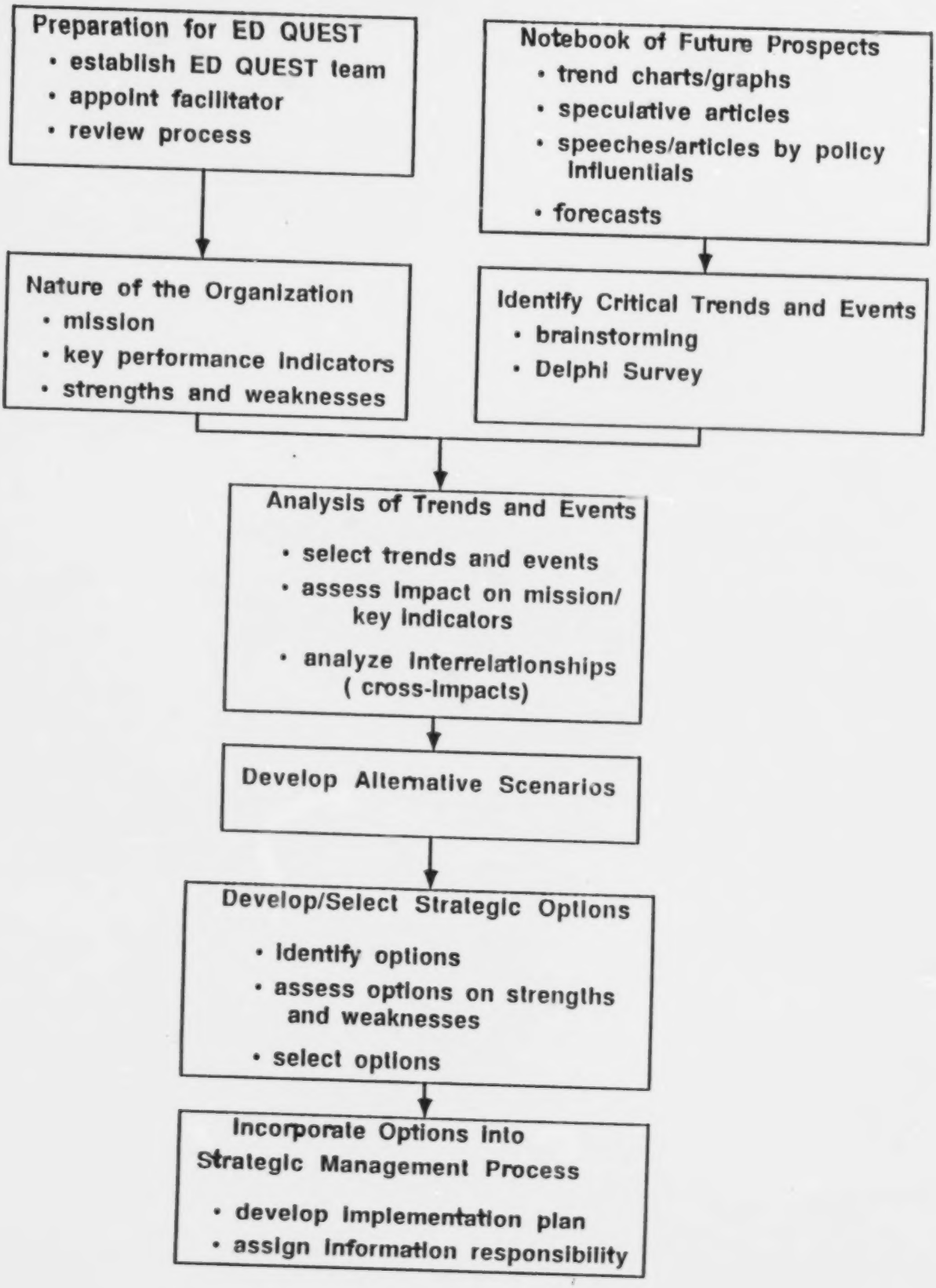
Primary Activities

The primary activities in the ED QUEST process are: (1) preparing for the ED QUEST process; (2) developing a notebook of critical trends and events; (3) defining the nature of the organization including mission components, indicators of its performance and its strengths and weaknesses; (4) identifying and assessing the impact of critical trends and probable future events; (5) developing and assessing scenarios; (6) selecting strategic options; and (7) incorporating those options into the strategic management process (see Figure 1). The products of the ED QUEST process are: (1) the identification of those trends and possible events which need monitoring and (2) the identification of courses of action that may be pursued in adapting to the anticipated changes implied by these trends and events. The general sequence of tasks in each of these activities is briefly described below.

The first task is to establish the ED QUEST team and select a team facilitator. The basic principles of the ED QUEST process should be reviewed with the participating team members. After this is accomplished, the team must prepare a notebook of trends which define the context within

Figure 1

ED QUEST


Preparation for ED QUEST
• establish ED QUEST team
• appoint facilitator
• review process
Notebook of Future Prospects
• trend charts/graphs
• speculative articles
• speeches/articles by policy influentials
• forecasts
Nature of the Organization
• mission
• key performance indicators
• strengths and weaknesses
Identify Critical Trends and Events
• brainstorming
• Delphi Survey
Analysis of Trends and Events
• select trends and events
• assess impact on mission/ key indicators
• analyze interrelationships (cross-impacts)
Develop Alternative Scenarios
Develop/Select Strategic Options
• identify options
• assess options on strengths and weaknesses
• select options
Incorporate Options into Strategic Management Process
• develop implementation plan
• assign information responsibility

which the organization functions and events that could affect these trends or the organization directly.

Next, the ED QUEST team must define the nature of the organization in terms of the client groups it serves, the needs it satisfies, and the educational services and programs it offers. In addition, the team should identify significant indicators of organizational performance, e.g., enrollment, graduates, etc. Finally, the team develops a list of the organization's strengths and weaknesses.

The initial ED QUEST cycle is accomplished in two all-day sessions spaced at least three weeks apart in order to allow sufficient preparation time for the second session. The heart of the first session is the identification of critical trends and future events that may affect the organization. These trends and events come from the social, technological, economic and political sections of society. Once the list of trends and possible events is established, the team must estimate which trends will define the context within which the organization will function in the future and which events would have a high impact either on one or more of these trends or on the organization if they were to occur. The team must also estimate the probability of each event and the level of each trend with a particular time frame. The set of events can then be divided into those that are of low, medium or high probability. Likewise the set of trends are categorized according to their importance to the college. The most critical events and trends are then put into a cross-impact matrix and their interrelationships are explored. It is important that the selected event set include a mixture of low, medium, and high probability events, for the team needs to anticipate the full range of surprises to the organization, i.e., the occurrence of a low or medium probability event or the non-occurrence of a high probability event.

During the interval between the first team session and the second, the material developed during the first session may be used to produce a series of scenarios and a session report. These documents are circulated to all team members and are used in either the last ED QUEST session or in a separate session solely devoted to the task of identifying the implications

to the organization of the alternative futures represented by the scenarios. The session report is a summary of the activities and the information produced during the first phase of the process. The scenarios are developed using the trends and events previously listed and the data obtained from the cross-impact assessment. Finally, in the second session, the team will reconvene to: (1) assess the scenarios for their organizational implications; (2) develop strategic options in response to the implications of each scenario; (3) assess these options in terms of the organization's strengths and weaknesses; and (4) assign responsibility for developing and implementing an action plan to accomplish the most appropriate options.

PREPARATION FOR THE ED QUEST PROCESS

There are four tasks which need to be completed in preparation for the initial ED QUEST session. These tasks are: (1) establishing the ED QUEST team; (2) selecting the team's facilitator; (3) briefing the team on the ED QUEST process; and (4) preparing materials showing past trends and forecasts of events that could affect the organization.

Establishment Of The ED QUEST Team

Members of an ED QUEST team should be selected according to: (1) the extent to which the candidate's organizational duties are related to determining and/or implementing institutional policies, (2) the extent to which the candidate is knowledgeable about environmental forces affecting the organization, and (3) the extent to which the candidate is capable of developing creative strategies for accomplishing the institutional mission. The number of individuals selected for a team can vary, but probably no fewer than eight or more than 15, as ED QUEST is essentially a small group process.

Selection of the Facilitator

One person should be designated as the team facilitator. There are two approaches to determining who should serve in this role. The first is to employ an outside consultant to carry out these tasks and responsibilities. This approach has the advantage of insuring a capable planner to organize and conduct the sessions, and it does not add an additional task to the workload of a busy administrator. The second way of selecting a facilitator is to assign a member of the administrative staff high enough in the organization to be perceived as a legitimate leader by his/her colleagues, i.e., the assistant to the president for planning, a vice-president for planning or a director of institutional research. This approach has the advantage of having someone knowledgeable about the

organization and its staff coordinating the process. Regardless of which selection method is used, the facilitator should have the ability to write clearly, to synthesize and summarize to lead small group discussion, and to use futures research methods.

Briefing the Team

One of the first activities of the facilitator is to conduct a preliminary meeting with the members of the team prior to the initial session to review the basic principles and activities of the ED QUEST procedure. At this meeting, the facilitator should emphasize the importance of involving the organization's top decision-makers in the ED QUEST process (if its results are to be accepted by the organization's staff), and explain the benefit of the ED QUEST process in clarifying the collective view of the environment. The facilitator should also stress that the object of ED QUEST is to provide an understanding of alternative future developments that might affect the organization; it is not an exercise in prophecy. Indeed, the process is only the first step in gaining an understanding of the environmental factors to consider in the organization's strategic management process. Later analysis, using the results of the ED QUEST procedure as a starting point, will probe more deeply into specific trends and events relevant to the organization's future.

Preparation of the Future Prospects Notebook

The planning time frame usually considered during the ED QUEST procedure is the next ten to twenty years in order to fully assess the potential payoff of strategies considered for implementation. Therefore, one of the initial tasks in ED QUEST is to develop a notebook of emerging issues and forecasts of potential events which could occur within a time frame along with critical trends which could affect the educational activities of the organization or the organization itself. Thus the notebook includes trend extrapolation of key educational statistics (e.g., enrollments), recent articles speculating about the future of education,

speeches and comments about the future direction of education by persons occupying prominent and/or influential public positions (i.e., legislators, policy makers, researchers, futurists, etc.); information on technological, economic, social, and political developments having possible future significance for education, and data suggesting changes in American values/attitudes affecting education. Each member of the team should receive a copy of the notebook at least two weeks prior to the first ED QUEST team session. A brief example of the material contained in such a notebook is shown in Appendix A.

General Guidelines for ED QUEST Sessions

Each ED QUEST session consists of a full eight-hour day; the only interruption should be for lunch and brief coffee breaks in the morning and afternoon. Discussions should be characterized by wide participation of members and by informality (using the rules of brainstorming). Ideally, the facility should be comfortable and should be in an area that is free from distraction. It should be equipped with flip charts (on easels), markers (for writing on the charts), and masking tape. Seating should be arranged to maximize communication between/among group members. Circular or semi-circular seating in the form of an open-ended, "horseshoe" is a good arrangement. It is useful to have tables on which participants can spread out their materials and complete forms.

DEFINING THE NATURE OF THE ORGANIZATION

Defining the nature of the institution as an organization is an important step in ED QUEST because it facilitates identifying (1) the trends and future events that could be particularly critical to the institution's future; (2) those aspects of the organization's mission and performance which may be changed or affected by forecasted trends and events; and (3) the institution's strengths and weaknesses which may influence the strategic options selected by the ED QUEST team.

Elements of the Mission

The first task in defining the nature of the institution is identifying specific elements which comprise the institution's mission. This is done through a general discussion focused around answering the following questions:

> "What groups of students and/or clients does the institution serve?"
>
> "What needs does the institution fulfill?"
>
> "What programs and/or services does the institution provide?

As the members of the ED QUEST team address each of the questions posed above, the essence of the discussion should be captured on newsprint while team members complete the form specified for this purpose (see Figure 2). For example, the students/clients of a state supported four-year college could include: recent high school graduates, adults retraining for a new occupation, transfer students from two-year colleges or other four year

Figure 2

ELEMENTS OF MISSION

Name of Organization _____

	DEFINITIONAL CATEGORIES		
	CLIENTS/GROUPS SERVED...	NEEDS SATISFIED...	SERVICES OFFERED...
PRESENT			
FUTURE			

institutions, adults in occupations requiring continuing professional education or cultural enrichment courses. The needs that these students have would include: entry and upgraded employment skills, career counseling, avocational interests, and liberal education. The programs and services that the college would provide to meet these needs could include: baccalaureate, residential and non-residential programs, student supporter services, faculty consultative services, non-credit instruction, and artists series. For a research university, the clients, needs and services would expand on those for a four-year college to include graduate students who need advanced research training, and governmental and private agencies who need research services and products.

Identifying Indicators of Institutional Performance

The ED QUEST team should now develop a list of the indicators of institutional performance in those mission areas that are critical to its success. These indicators may include, but are not limited to, those measures of the following institutional attributes:

- effectiveness
- efficiency
- cost
- competitive advantages

Examples of a few indicators that are fairly typical for measuring the performance of institutions of higher education are the following:

- placement rate of graduates
- retention rate
- awards received by students
- awards received by faculty members
- institutional cost per student

Once an initial list is developed, the team should discuss the significance of each indicator and then through a simple polling procedure identify at least 10 but not more than 15 indicators. The resulting list will be used later in the process.

Identifying Strengths and Weaknesses

Lastly, the team should proceed to develop a list of the strengths and weaknesses of the institution. The definitions which follow should be used as guides:

> **Strength**- A current advantageous situation, capability, and/or success that may be either internal or external to the institution.
>
> **Weakness**- A current disadvantageous situation and/or capability that may be lacking internally in the institution or external situation that places the institution in a disadvantageous position.

An alternative procedure is to have each the team member complete a form (see Figure 3) prior to the initial Ed QUEST session. The facilitator can then compile a preliminary list of strengths and of weaknesses which will be later reviewed and refined by the team.

Figure 3

ORGANIZATIONAL STRENGTHS/WEAKNESSES

Name of Organization _____

STRENGTHS (Current advantageous situations, capabilities and/or successes)	WEAKNESSES (Current disadvantageous situations, capabilities, and/or lack of successes)
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.
9.	9.
10.	10.
11.	11.
12.	12.

NOTE: Use as many forms as required by the number of strengths and weaknesses identified by the group.

IDENTIFYING THE UNIVERSE OF CRITICAL TRENDS AND FUTURE EVENTS

The critical trends and future events to be assessed during the ED QUEST process are identified in one of two ways. Both approaches use a Delphi procedure for forecasting future changes; they vary in terms of their complexity. However, either approach will yield a data base of trends and probable events that team members perceive as being significant to the institution's future. The team's facilitator should decide upon the particular approach that will be employed based upon the (1) time available to prepare for the ED QUEST session and (2) the scope of environmental scanning that will be conducted.

In the first approach, the ED QUEST team brainstorms a list of trends and future events at the first session, and selects from this list those trends and events that would be the most significant if they were to occur. This approach, although straightforward, does use time during the session which could be devoted to the team assessing the implications of the final set of trends and events on the college and their interrelationships. In addition, the initial list of trends and events forecasted may not be as comprehensive in their scope.

In the second approach, several Delphi rounds are administered to team members and to other members of the administration staff and faculty prior to the initial session and a final round during the session itself. This approach allows greater participation by members of the college's staff other than those on the ED QUEST team. Consequently the scope of the events forecasted to occur and of the trends having organizational consequences are greater thus increasing the likelihood that the list of trends and events will be more inclusive of those emerging in all environmental sectors. Also, this approach does allow the team to spend more time discussing the importance and the impact of the trends and events during its first session. However, the development, administration, and tabulation of the questionnaires for each of the Delphi rounds takes substantially more time to complete.

Regardless of which approach is used, it is important for the

facilitator to define and distinguish between trends and events:

- A trend is a series of social, technological, economic or political characteristics which can usually be estimated and/or measured over time. Trend information may be used to describe the future, identify emerging issues, and project future events. An example of a trend would be the number of adults entering college as part-time students.

- An event is a discreet, unambiguous, confirmable occurrence which makes the future different from the past. An example of an event would be congressional passage of a law mandating national service for all persons 18 to 21 years of age.

Approach 1: Brainstorming Critical Trends and Events

The team should first identify those trends which, will be important in defining the context with in which the college will function in the future and those future events which they believe have the following characteristics:

- a significant impact upon the institution if the event were to occur

- a likelihood of occurring by some target year in the future (i.e., 1991, 2000, etc.)

The simplest method to generate these trends and events is to conduct a brainstorming session during which team members may refer to the Future Prospects Notebook or draw on information they have obtained through personal reading. It is important that the team identify trends and events that span the social, technological, economic, and political sectors. Once they complete this list of trends and future events each member of the ED QUEST team is asked to select from the list five trends which he/she believes will have the greatest impact on the college.

The session's facilitator then tabulates on a master list the frequency with which each trend is selected by team members. The 10 to 15 trends most frequently chosen are those which the team believes are the most

critical to the future of the college and become part of the list of "Critical Trends and Events." They are later used in the ED QUEST process to estimate their impact on the institution's mission and performance. Those trends not chosen become part of the institution's data bank of trends and events.

Similarily, the team's members then select by a simple voting procedure those events they believe will have the greatest impact on the college if they were to occur. Those events most frequently selected by the team as having a high impact are then assessed to determine their probability of occurring some time in the future. This is done by having each member of the group list by number on the appropriate form each event selected by the group as having a high impact. Each member should then assess the probability that the event will occur by a specified year. That is, using a scale from 0 - 100, each team member should write his/her estimate of the probability of each event occurring within the next 10-15 years in the column titled, "My Estimate" under the part of the form labeled "PROBABILITY" (see Figure 4). Once all members have made their estimates, the mean probability for each event is computed by summing the individual estimates and dividing by the number of estimates. The mean probability of each event is then entered on each team member's form, in the column titled "Group Estimate."

This list of high impact events can now be further subdivided into several subsets, one subset containing low probability events (0 - 30), one containing medium probability events (30 - 70), and one containing high probability estimates (70 - 100). Including events of varying probabilties ensure ensures that the event set used in the analysis contains the full range of uncertainty.

ASSESSMENT OF PROBABILITY FOR HIGH IMPACT EVENTS

EVENT NO.	EVENT	PROBABILITY	
	Description	My Estimate	Group Estimate

Figure 4

Approach 2: Delphi Survey to Identify Events

The second approach uses the Delphi procedure for forecasting the critical future events and trend levels. The procedure consists of the facilitator administering two rounds of the Delphi questionnaire to the ED QUEST team and any other persons who the team members wish to include in order to secure broad input in their ED QUEST process. The entire group of individuals who receive these questionnaires constitutes the Delphi panel. The first round of the Delphi is intended to solicit perceptions of panel members as to the critical trends and future events that may be significant to the institution. It consists of distributing the Future Prospects Notebook and an open-ended survey soliciting the identification of (1) critical trends and (2) future events which if they occurred as forecasted, would have a significant impact on the institution. Respondents are requested to review the Notebook and think about their previous reading and discussions with colleagues before completing the Round One questionnaire (Figure 5). The information obtained in Round One (R1) is used in constructing the questionnaire for Round Two (R2). In preparing the questionnaire, the facilitator should take several precautions. First, not all trends and events submitted by the panel members in R1 should be included on the R2 questionnaire. There will be some trends and events that are redundant; i.e., they were already submitted by someone else, perhaps with slightly variant wording. Statements which include references to a trend's importance or to an event's impact on the institution should be reworded or excluded, since the intent is to have team members provide an assessment of the impact of an event in R2 unbiased by the views of others. Many trend and event statements will not be clearly stated and will need to be reworded. Finally, the facilitator may have to add trend and event statements to the R2 questionnaire to compensate for the lack of statements to sufficiently describe potential changes in a particular sector of the college's environment (i.e., social, technological, political, etc.). These statements will come from a review of a variety of information resources in the social, technological, economic, and political spheres.

FIGURE 5- ROUND 1 QUESTIONNAIRE

EDUCATIONAL QUEST SURVEY

In this questionnaire, you are asked to think about the future of education in the college's service area, the state, and the nation.

Specifically, you are to select three trends you believe will have importance to this college's future and three events that in your opinion will have (1) a high likelihood of occurring in the next 10 years and (2) a significant impact upon higher education.

List each trend and event in the appropriate space below.

Trend 1 _____

_____

_____

Trend 2 _____

_____

_____

Trend 3 _____

_____

_____

_____

Event 1 _____

_____

_____

Event 2 _____

_____

_____

Event 3 _____

_____

_____

The RD2 questionnaire contains two parts (see Appendix B for an example). In Part I respondents are requested to assess the importance of each trend to the future of the college using the scale of 0 (no importance) to 10 (major importance). In Part II respondents are requested to estimate the probability of each event occurrence (0-100) and it's impact on the institution (0-10) if it were to occur.

Once the members of the panel have completed filling out their questionnaires, the responses are tallied for each trend and event. By mathematical computation, the facilitator of the ED QUEST process derives the response for each trend, showing the panel's estimate of its importance to the college, and the mean probability and mean impact for each event. These results along with the trends and events included in R2 of the Delphi are placed on a master list of trends and events. This list will be reviewed in the initial session of the ED QUEST team and in the later development of scenarios. For ease of review, the trends and events contained in the master list may be grouped in environmental sector categories.

To graphically display the results of the Delphi's second round, charts are prepared. Trends are placed on a chart grouped in four categories of importance (i.e., High, Strong, Moderate, Low/None) according to importance. Events are placed on a probability-impact chart see (Figure 6).

A probability-impact chart displays the probability impact space of each event in comparison with all other events. The vertical axis of the chart shows the extent of its positive and of its negative impacts. The probability of the event's occurrence in the coming decade (0 to 100) is displayed on the horizontal axis. The purpose of the chart is to facilitate the analysis of the event set by the ED QUEST team. By using these charts, team members may identify events judged to have a signficant impact on the institution if they were to occur. The chart also allows team members to determine for this set of events having a low probability of occurring. Such events if they were to occur would pose a suprise occurrence to the institution. More significant in this regard may be

Probability/Impact Matrix

PROBABILITY	IMPACT		
	High 6.0 - 10	Moderate 3.0 - 5.9	Low/None 0 - 2.9
High .75 - 1.00			
Moderate .50 - .74			
Low 0 - .49			

those events which have a high impact and high uncertanity, that is, those centered around the 50 percent probability line.

At this point, the facilitator creates a second list of trends and events, consisting primarily of those trends which are evaluated as having high importance and only those events which are of high impact but varying probability. As noted earlier, included in the event set are low, medium, and high probability events. The inclusion of these events on the list is important in order to include realistic uncertainty into the development of alternative images produced in the scenario writing stage of the ED QUEST process.

During the ED QUEST initial planning session, the master list gives participants the opportunity to review and question the assessment arrived at by the team for each event or trend. That is, individual members of the ED QUEST team may provide special information that can cause the other members of the team to reassess their responses. Once the group has generally approved the master list, they begin a review of the critical trends and events. Participants should have a typed list of these trends and events and a hand-written list on newsprint taped to the wall of the room. If group discussion is used, participants will either ratify the list or amend it. This activity usually results in the addition of trends and events not initially identified.

ASSESSING THE INTERRELATIONSHIPS BETWEEN TRENDS AND EVENTS

The next step in the QUEST process procedure is to complete a simple cross-impact matrix. The purpose of this step is to assess the relationship of each event to each of the other events in the set.

Using the form titled "Cross-Impact Assessment" each team member lists (down the left-hand side of the form) the events identified earlier (see Figure 7). At this time, the estimate of the probability of each event's occurrence ("Group Estimate") is also written in the column where the heading contains the phrase "With this probability...". Across the top of the form, the number of each event is used to identify it on the matrix. It is important, however, that these numbers are in the same sequence as those in the left hand column.

Each member then fills out each cell of the matrix by assessing the change in the probability of each event occurring if each of the other events were to occur. The scale below can be used in assessing such change:

+3 (greatly increased probability of event occurring)
+1 (some increased probability of event occurring)
0 (no change in probability)
-1 (some decreased probability of event occuring)
-3 (greatly decrease probability of event occurring)

When participants complete their matrices, the facilitator tabulates the individual assessments for each cell algebraically, (i.e., with regard to sign). The sign (+ or -) indicates the increase (+) or decrease (-) in the probability of the impacted events if the impacting event occurs. The size of the number in the cell indicates the degree to which the event's probability is influenced by the impacting event.

The facilitator then sums the rows and columns without regard to sign, i.e., obtains the absolute values. The row totals represent the relative impact of the occurrence of an event on the other events. The larger the sum the greater the impact. The column totals indicate the relative sensitivity of one event to the occurrence of the other events. Again, the larger the sum of a column, the greater the likelihood that the event would be influenced by the other events. The information in the cells, row totals and column totals will be used in developing scenarios.

CROSS-IMPACT ASSESSMENT

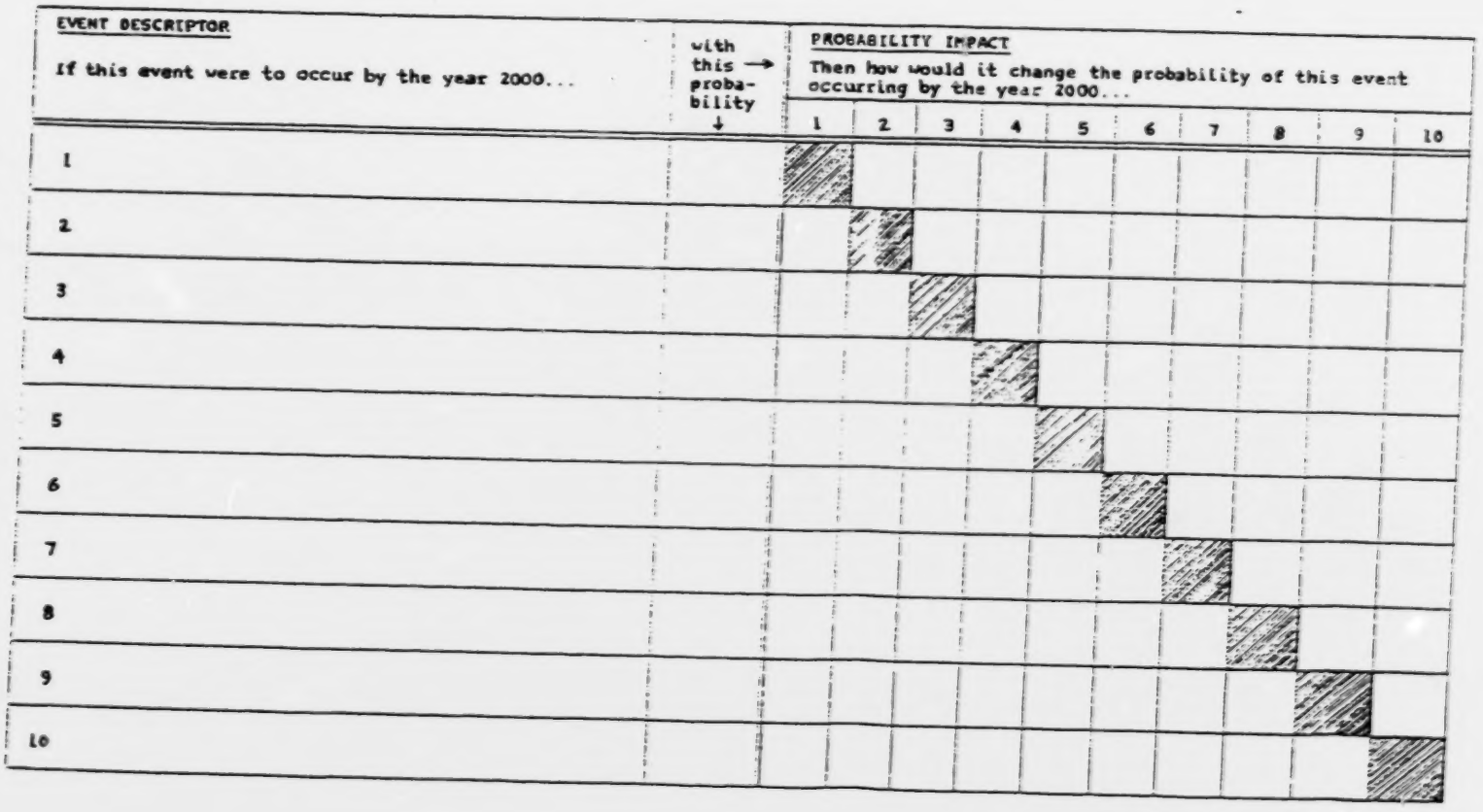


Figure 7

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ASSESSING CRITICAL TRENDS AND EVENTS ON THE INSTITUTION

Once the team has completed the selection of the critical trends and events, they should assess their importance and impact on the institutional mission, key performance indicators, and strengths and weaknesses. This assessment allows the members of the team to identify the specific changes that the critical trends and events may have on the college's mission and how they may affect organizational performance.

Impact on Mission

In assessing the impact that the critical trends and events are likely to have on the mission of the institution, it is important to recall that institutional mission is defined in three categories: (1) client group; (2) needs served; and (3) services provided. These categories are posted on a wall of the room (on newsprint), with a separate sheet for each category. Each sheet contains a listing, initially developed by the team members of the present circumstances related to each category (see section on "Defining the Nature of the Institution," (i.e., present client groups, present needs served, and present services provided). The team may wish to make changes to these listings. Likewise, each sheet contains an open selection headed "Future Changes" where group suggestions may be recorded.

After reviewing the present circumstances of the institution, the team then evaluates, in a general way, how the trends and events will affect the college's mission. That is, will they add to, substract from, or otherwise alter the client groups currently being served, the needs that are being met, or the services being provided. To illustrate, it may be forecasted that advances in telecommunications technology would lead to an increase in the number of "non-mobile" students served by the college (i.e., those who are unable to attend classes on the central campus, but who would enroll in courses offered by way of television). Such a forecast may be listed as a future change in the mission under the "clients served" category. The resulting analysis is later used when the ED QUEST team formulates strategic options.

Impact on Key Indicators

Another important action for the planning team in this session is the verification of key indicators identified previously. These indicators are defined as "quantitative measures of organizational performance." They, too, are listed on newsprint and displayed for the group's review. Generally, the list will at first contain those key indicators which have been used in the past along with possible other indicators which the facilitator may wish to propose. The ED QUEST team will in all probability make a number of adjustments and additions to the list.

When the group reaches agreement on the key indicators, its next action is to assess the impact which the critical trends and events will have upon the indicators. In order to more quickly complete this exercise, we recommend that the team be divided into smaller groups. Each group is assigned a number of indicators, which are to be listed in the slanted columns at the top of the grid (see Figure 8). The trends and events (by number, preferably) are listed under the "TREND/EVENT" heading. Both the indicators and the trends and events continue to be posted on walls where they may be seen by all team members.

All groups proceed to assess the positive and negative impact on a 0-10 scale that each of the trends and events will have upon each of the assigned indicators, placing the indicator of the extent of the impact in the appropriate block representing a point of intersection between the trend or event and the indicator.

When this process is completed, the facilitator collects all grids and retains them to be tallied. This involves summing all positive and negative impacts for each trend or event and recording the scores in the columns titled "Total Positive Impact" and "Total Negative Impact." The column titled "Absolute Impact" is the absolute (without regard to sign) sum of total positive and total negative impacts.

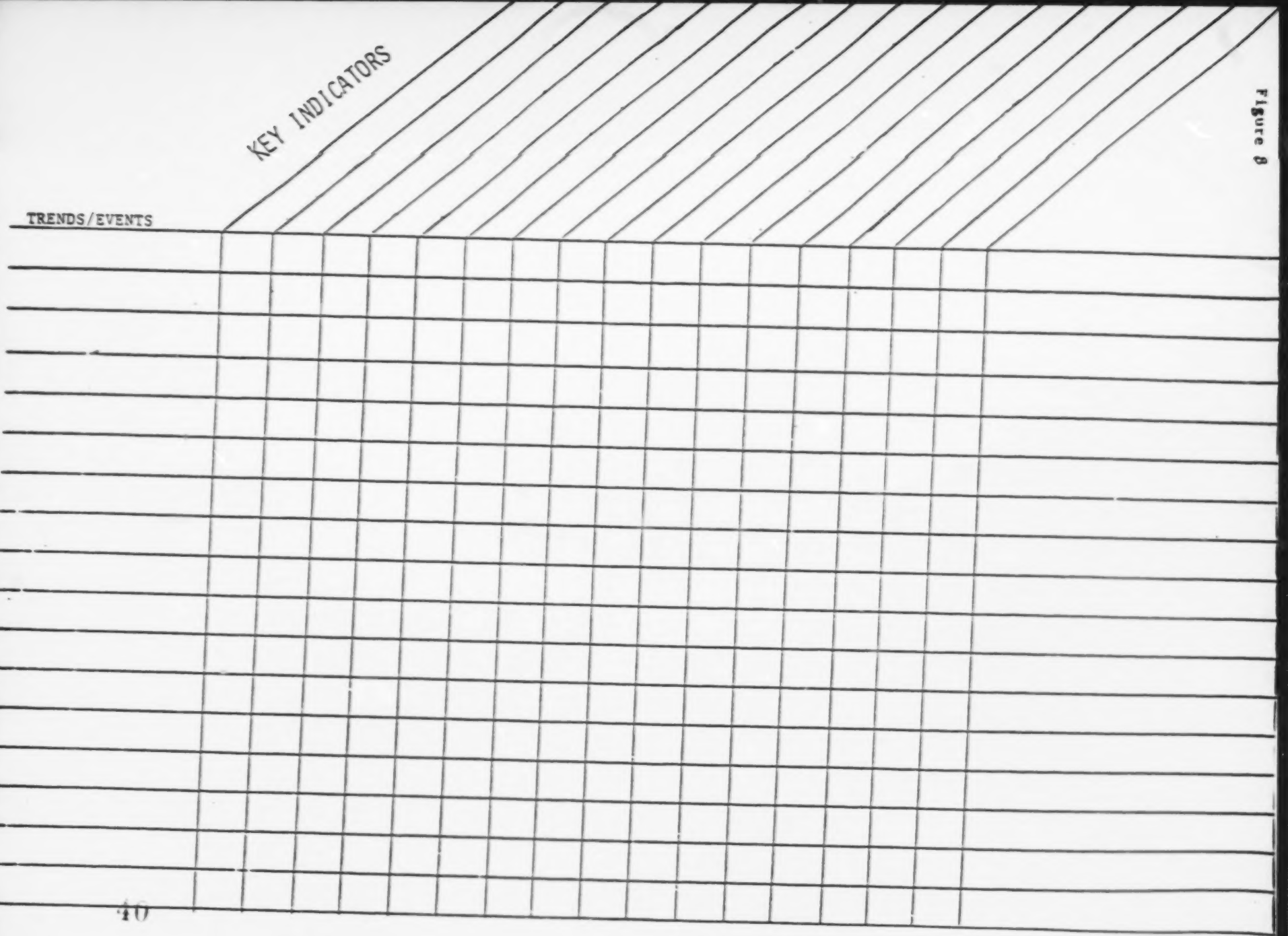


Figure 8

The results of the key indicator assessment are used later in the ED QUEST process. That is, the absolute sums of trends and events provide the team with a relative "criticality index" of those trends and events which are most important in developing strategic options. The result of this assessment provides the team with information that can be used in developing alternative scenarios of the college's future.

Verification of Institutional Strengths and Weaknesses

The final activity of the team is to select the most significant institutional strengths and weaknesses for use in assessing strategic options. A preliminary list was previously generated from the perceptions of ED QUEST members (see section on "Defining the Nature of the Organization"). This list is distributed for refinement and reduction. A typewritten master list of strengths, weaknesses and forms to be used in the selection process is distributed to each team member. The task at this point is to reduce the master lists to smaller listings of 10 to 12 strengths and 10 to 12 weaknesses. This is accomplished by asking team members to "vote" by listing in priority order the strengths and the weaknesses on the form provided. The facilitator collects the forms, tallies the results, and ranks strengths and weaknesses by lowest score to highest score. The top 10-12 strengths and weaknesses are then listed.

SCENARIO DEVELOPMENT

The data developed from the initial ED Quest session is collected and used as a basis for preparing a series of scenarios. The purpose of these scenarios is to analyze the external environment of the organization and depict the possible alternative futures faced by the college. Since no one can predict the future environment which will actually materialize, it is important to have a realistic sense of the range of possibilities in order to enbale us to identify those features which may be common and, therefore, likely to have an impact on the institution no matter which alternative does occur. The facilitator is responsible for drafting the scenarios.

The specific documents that form this data pool are the following:

1. A list of critical trends and events containing any trends and events transferred from the master list by action of the Ed QUEST team.

2. An institutional mission assessment of clients, needs satisfied, and services/programs, specifying any future changes as perceived by the team.

3. A list of key indicators, reflecting the changes in organizational performance as assessed by the team.

4. A cross-impact matrix showing interrelationships of events.

Writing scenarios is preceded by the development of a collection of cards (3" x 5"), each having a single critical trend or event typed on its unlined side. The probability and impact indexes, determined earlier by the delphi process (as used in approach one or two), will also be typed on each card listing an event within parenthetical enclosures. In addition, the scores suggesting the impact of the events on key indicators should be recorded on these cards. A similar card is typed for each trend.

The facilitator then uses these cards as a basis for composing scenarios. The cards should be laid out on a table or other flat surface where the facilitator may have a broad view of them. Special attention should be given to trends and events which, according to the planning

team's forecast, would have a high importance or strong impact upon institutional performance (key indicators) and mission.

Using these as a starting point, the facilitator should begin to project a plausible chain of events that can be used to construct a particular view of the future. Here the facilitator will want to consult the team's estimates of event interrelationships contained on the cross-impact assessment summary. Initially, the facilitator should concentrate on the "strong impact" events, but the interaction of numerous events should also be considered. Consideration need not be limited to only those trends and events identified as critical, but may include all trends and events identified during the process. Chains of events should be formed illustrating diagrammatically these inter-relationships. A guiding theme is: "If this happens, then that will probably occur as well, thus leading to these other developments." Some events, of course, would increase the likelihood that one set would occur while, at the same time, decreasing the chances that a different set would occur. The results of the cross-impact matrix are used to construct these event chains.

One technique that may be helpful in creating a sense of the range of possible alternative futures is to first develop a "most likely" future based only on the consensus forecasts of the trends indentified earlier and then develop variations off of this theme. That is, by using the cumulative probabilities and relationships of those events specified in the cross-impact model, it is possible to write an "unsettled" future, a "turbulent" future, and a "chaotic" future. For example, an "unsettled" world is one where events are made to occur in the year in which their probability reaches the 60 percent level. In the "turbulent" world, the level is 30 percent. In the "chaotic" world,the level is 10 percent.

A technique that can be used to develop a graphical presentation of the events and trends comprising the various scenarios is that of the impact network. This technique is designed to identify the potential impacts of key events on other events and trends and the way the particular alternative future represented by the respected scenario could possibly unfold.

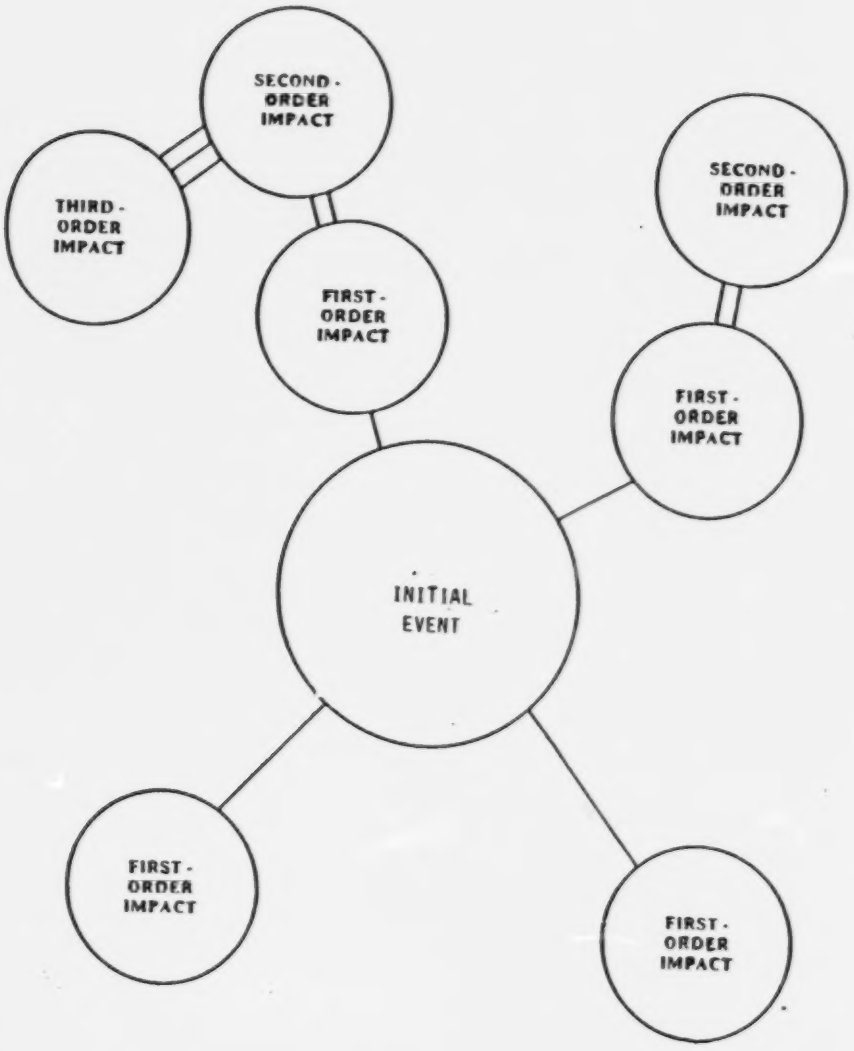
The procedure is quite simple. A particular event, identified as a strong actor from the cross-impact analysis and/or key indicator assessment, is selected. Any event or trend that is likely to occur or emerge is accepted with the initial event written in the middle of the page. Each first-order impact is linked to the initial event by a single line (see Figure 9).

When events resulting from first-order impacts have been identified or when the space around the initial event is occupied, the process is repeated for each first-order impacted event. Again, the task is to determine the possible impacts if this event were to occur. The second-order impacted events are linked to the first-order events or trends by two lines. These steps are repeated for third-and fourth-order impacts, or as far as the analyst would like to go. Typically, third-and fourth-order impacts are sufficient to explore all of the significant impacts of the initial events. The group may wish to identify feedback loops that change the rate or intensity of a development. For example, a fourth-order implication might increase or decrease an implication stemming from a third or a second order impacted events. The value of impact networks lies in their simplicity and in their potential to identify a wide range of impacts very quickly. If more impacts or higher-order impacts need to be considered, the process is then repeated.

It should be emphasized that writing scenarios is not an exercise in prophecy, but rather an attempt to envision a number of plausible alternative futures that, were they to occur, would require the college to respond in some way. Their purpose is to assist the team in developing strategic options for dealing with each of them.

Figure 9

IMPACT NETWORK



ANALYSIS OF SCENARIOS

The planning team is now ready for the second session of their ED QUEST experience. During this session, the team must (1) identify the implications of each scenario for the institution; (2) formulate preliminary strategic options; and (3) assess the impact of the strategic options on the institutions's strengths and weaknesses.

A packet of materials for the team must be developed prior to the meeting. The packet should include a copy of each scenario, a scenario review form (see Figure 10), and two grid sheets, one for listing institutional strengths and one for listing institutional weaknesses. At the beginning of the meeting, the facilitator should explain the process which the team will follow. The team may then be divided into small groups. The number of groups should correspond to the number of scenarios. It is recommended that one scenario be assigned per group unless there are compelling reasons to do otherwise.

The initial activity of this session is for the team to analyze the scenarios that have been created. The analytical process consists of developing responses to two major questions. First, is the scenario plausible? That is, "Do we consider it a reasonable possibility? Could it happen?" This is not to suggest that the group believes it will happen. Second, what are the implications of the scenario? "How would the institution be affected if this particular future materialized?" Each group selects a recorder who captures the implications identified for later presentation to the ED QUEST team. Members of the group may recommend changes to certain scenarios. For example, a scenario may be changed from a very pessimistic view to a more optimistic one by altering a number of assumptions which had influenced the original prediction. A particular scenario may even be split into two scenarios, retaining a common base of events but branching into different alternative futures. Conversely, and not uncommonly, two scenarios may be combined into one.

The recorder is asked to list on newsprint (previously posted on a wall) the implications suggested by the group. This procedure will enable

Figure 10

Scenario: _____

SCENARIO REVIEW FORM

1. IMPLICATIONS OF THE SCENARIO:

2. STRATEGIES:

the spokesperson to report to the entire team the implications discussed by the sub-group. Other members of the planning team will critique these presentations and propose additional implications which, if acceptable to the team, will be added to the list.

DEVELOPMENT OF STRATEGIC OPTIONS

Upon completing the review of the scenario and its anticipated implications, each team should then develop through brainstorming a preliminary list of strategies that it considers appropriate for "nomination" as strategic options. These are strategies that the group initially identifies as being appropriate and feasible responses to one or more of the implications previously identified.

Once the preliminary list is developed, the group reviews the strategic options listed to ensure that each one would significantly place the college in an advantageous position in relationship to the future environment described in the scenario. Statements of proposed options which focus more on operational aspects of the institution may be either rewritten to reflect a more strategic emphasis or combined with other options into a new strategic option statement. In summary the group culls the preliminary list of statements by eliminating or combining the revised list of strategic options.

Assessing Strategic Options

Each group then engages in an assessment process in which they attempt to measure the potential of each strategic option on the revised list to enhance or inhibit each institutional strength and weakness. They prepare a grid for the entire set of strengths and another similar grid for weaknesses (see Figures 11 and 12). Each grid cell represents an intersection point between a strategy and strength (or weakness). The group should indicate their assessment of the impact by entering a value in each cell. Scale values of +10 (greatly enhances) to -10 (greatly

STRATEGIC OPTION IMPACT MATRIX
(ORGANIZATIONAL STRENGTHS)

STRATEGIES	STRENGTHS									
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.

Figure 11

STRATEGIC OPTION IMPACT MATRIX
(ORGANZATIONAL WEAKNESSES)

STRATEGIES	WEAKNESSES									
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.

Figure 12

inhibits) are used. The issue being addressed in this instance is, "Does this strategy enhance (+ values), inhibit (- values), or have no impact (0) on this institution's strengths (or weaknesses)?" Once a grid for strengths and a grid for weaknesses have been completed, the assigned values are then algebraically summed for each row. The significance of this sum is that it represents the overall impact of a particular strategic option on all strengths (or weaknesses). The value entered in each cell represents the impact of the particular strategic option on the particular strength (or weakness) with which it intersects.

Once the sums of all strategic option impacts on all strengths and those for all weaknesses have been computed, the group can select the strategic options that might be considered for inclusion into the college's strategic management process. The groups should select strategic options whose impact on institutional strengths are represented by large positive scores and whose impact on institutional weaknesses are represented by large negative scores. That is, the larger a particular strategic option row's positive sum, the more likely the impact will enhance the college's strengths. The larger a particular strategic option's rows negative sum, the more likely the strategic option will inhibit that weakness.

Selecting Strategic Options

Once the groups have completed their assessment of their respective strategic options, the Ed QUEST team is reconvened. A representative of each group lists the revised strategies (in terms of the strengths and weaknesses analysis) that the group is proposing for adoption by the college. This list is distributed to all members of the team. A spokesperson for each group then reviews main elements of their scenarios, discusses the proposed strategies (i.e., rationale, intent, etc.) and presents the results of the assessment on organizational strengths and weaknesses.

Upon completion of the group presentations, the facilitator leads a general discussion among the members of the ED QUEST team. The intent of

the discussion is to address the question: "Which strategies are the most robust and could, if implemented, address the implications of more than one of the alternative futures presented in the scenarios?" Those strategies which the team decides meet this criteria are the ones that become important to the future of the institution.

There may be other criteria that the team will use to select the final list of strategies. Such criteria might include political feasibility or a fortuitous set of circumstance. For example, a strategic option that involved the development of an innovative degree program because of current interest by a regional foundation may be considered inappropriate because team members conclude that the option's chances of successful implementation are not good.

INCORPORATING STRATEGIC OPTIONS INTO STRATEGIC MANAGEMENT

The results of the ED QUEST process may be incorporated into the institution's strategic management in several ways. Specific plans for implementing each strategic option selected by the planning team may be developed. If an institution were to use this approach, personnel would be assigned responsibility for developing detailed action plans and recommendations for implementing a particular strategic option. Typically these individuals would be staff members with knowledge, expertise, and functional responsibilities in the organizational area related and/or affected by the implementation of the strategic option. Such an action team might periodically report on their progress to the college's administration and the institutional planning team and make recommendations for changes in institutional policy.

Another approach is to incorporate the strategic options into the institution's annual operational plan. The option identified through the ED QUEST process would be reformulated as a specific institutional objective and specific sub-objectives targeted for completion for a particular year and assigned to the appropriate functional unit responsible for its accomplishment would be developed.

Regardless of the option the institution's administration decides to use, it is imperative that the results of the ED QUEST process form the basis for setting the strategic direction of the institution. By anticipating what is happening in the external environment and assessing how it will affect the nature and quality of their programs, the senior administration of the institution will be in a better position to deal with uncertainties inherent in the future and improve their institution's capacity to accomplish its mission.

PART II

USING ED QUEST AT UTOPIA COUNTY COMMUNITY COLLEGE

INTRODUCTION

This part of the manual illustrates how the ED QUEST process was used at a fictitious two-year institution, Utopia County Community College. The description of the procedures followed by UCCC's planning team in using ED QUEST is based upon the actual experiences of planning teams of several institutions that have used the process. Similiarly, the examples used to illustrate the products of the ED QUEST processs at UCCC are drawn from the actual results achieved by the planning teams at these institutions

In order to add realism to UCCC's experience with the ED QUEST process, a general description of the college has been provided in the immediately following section.

DESCRIPTION OF UTOPIA COUNTY COMMUNITY COLLEGE

Utopia County Community College (UCCC) is a hypothetical public two-year college located in the southeastern section of the United States. The college was established in the Spring of 1965 by a resolution passed by the Legislative Commission of Utopia County and approved by the state's Commission for Post- secondary Education which created the Board of Trustees of Utopia County Community College. This board was charged with the responsibility of ". . . developing and implementing a comprehensive program of post secondary education to serve the residents of Utopia County desiring general education leading to a baccalaureate, vocational and technical training, and continuing and adult education."

Utopia County Community College officially opened in September, 1965, as the seventh institution in a state system of fourteen public two-year colleges. From its founding, the institution adopted an "open-door" policy by admitting all service area residents who met either one of the following requirements:

1. Graduates holding diplomas from accredited secondary schools.
2. Persons 18 years of age or older, not possessing a high school diploma, but who can present evidence of being able to

pursue successfully and to profit a proposed course of postsecondary study.

The College's Service Area

Utopia County is located in the most rural southwest portion of the state. It contains about twenty percent of the state's land area (4,300 square miles) and twelve percent (158,000) of the state's population. The county has several small towns ranging in population from between 8,000 to 12,000 people and a small city, Franklin, having a population of approximately 63,000. It is the most productive agricultural county in the state, although the total service area has been undergoing major changes in the economy. In 1950, 35,000 people were employed in agriculture; in 1980 only 8,500 were employed in the field. During the same period the non-farming workforce has grown from about 17,000 in 1950 to over 47,500 in 1980. The distribution of persons employed in Utopia County by major employment classification is described in Table 1.

Table 1

Distribution of Employed Workforce by

Major Employment Classification

Classification	Number Employed
Manufacturing	21,320
Construction	2,890
Transportation and Public Utilities	1,480
Wholesale and Retail Trade	7,060
Finance, Insurance, Real Estate	1,580
Services and Miscellaneous	4,380
Government	8,870
Agriculture	9,473
Total	57,053

The workforce of UCCC's service area contains 21,320 persons employed in the manufacturing sector. In 1980, approximately twenty-two (22%) percent of all were employed in the area's steel producing industry. This

percentage represents a decline from 1960 when the percentage was forty-three (43%) percent. Those not employed in the steel industry have jobs in such diverse industries as glass (8%), textiles (12%), machine tools (5%), wood products (3%), plastics (10%), food processing (5%), micro-electronic components (9%), home furnishings (8%), computers (6%), and medical products (9%).

Since 1972, five corporations have established manufacturing facilities in Utopia County. Two of these industries are multi-national companies in the field of high technology. The area's industries are now beginning to be supplemented by the so-called "clean" businesses such as computer services, insurance, and bio-medical research as the economy matures.

Personal income increased slowly throughout the service area prior to 1960. Since that time, the economic growth rate has increased significantly because of the state and local county government's aggressive economic development program. However, the service area still has pockets of those economically poor, with 14.2% of the families having an annual income of less than $4,500. Persons in the near poor category make up approximately 21.5% of the service area's inhabitants. The very poor account for 8.5% of the area's population. Approximately 6.4% of all families in the service area receive public assistance or public welfare income.

Many residents of Utopia County live more than 45 minutes commuting distance from the city of Franklin where the college's main campus is located. Public transportation in the region is not well developed. Even for those residents with private transportation available, the commuting time and transportation cost required to attend the college become barriers. In order to overcome these restrictive geographic barriers, UCCC has implemented several strategies. Extension centers were opened in three locations over the past two years. Through the cooperation of local citizens, housing accommodations are made available to the college's students at nominal costs. Also, students are encouraged to participate in car pooling.

The economic changes are only now beginning to solve problems of long standing that have occupied area residents. From the depression of the 1930's until the second half of the decade of the 1960's, the area has experienced a high rate of out-migration as people sought better opportunities elsewhere. This trend particularly characterized the lower economic and minority populations. Utopia County Community College has attempted to address these problems of its services by increasing access to educational opportunities available from the college and by enhancing economic development through increased program offerings in technical education. This effort, however, is complicated by problems that are both historic and current. The state has traditionally ranked in the bottom half (39th) in percentage of youth going on for some form of postsecondary education.

The College's Student Body

At the present, UCCC has a student body of almost 2,400 credit course students distributed rather unevenly between the college's vocational and technical and general education (transfer) divisions. Approximately 70% of the students are enrolled in the vocational and technical divisions of the college while the remainder of the students are enrolled in general education division programs. In addition, the institution's continuing education programs enroll 1,800 non-credit students. Since 1980, the part-time student population has grown as a proportion of the institution's total credit enrollment (See Table 2).

The student body of UCCC is quite diverse. In the college's early years, the vast majority of students (approximately two-thirds) were in the typical 18-22 year age group and came from white, middle class backgrounds. There are definite indications, however, that more women, and adults, are becoming interested in the college's programs. College officials over the years have given priority to efforts to recruit large numbers of minority group students, particularly women. As evidence of their success, the male/female ratio has shifted dramatically from a 1980 ratio of 64/36% (favoring males) to a ratio of 50/50% for the current year. For the last three years, enrollment levels have increased by 15%.

TABLE 2
Student Profile
(Credit Students)

		Current Year	1980
A.			
	Male	50%	64%
	Female	50%	36%
B.	Race		
	Black	19%	28%
	White	75%	71%
	Other	6%	1%
C.	Enrollment Status		
	Full-time	53%	60%
	Part-time	47%	40%
D.	Average Age		
	Male	25%	25%
	Female	27%	23%
	Average	26%	23%
E.	Veterans Enrollment	16%	18%
F.	Attrition Rate	37%	31%
G.	Transfer-Percentage	21%	29%
H.	Continuing in Higher Education	25%	27%

The greatest enrollment increases came in the number of women, minorities and working adults who have enrolled in the institution. Special support has been allocated to sponsor on non-traditional courses for women and A Center for Displaced Homemakers and Re-entry Women will be established shortly with assistance from a combination of federal and state resources. Similar efforts in outreach, recruitment, and program development have been made for minority populations, the handicapped, and the elderly. UCCC is the adult basic and general education center for the

southern portion of the state. Special programs stressing re-entry programs for the elderly have been emphasized in the Division of Continuing Education and Community Services.

From a different perspective, the minority population is well represented within the student body. While 19% of the area's population is minority, the student body is 25% minority. Many of these students have unusual educational needs. The sources of UCCC's students may be summarized as follows:

-- The area served by the college (79%).

-- The low income disadvantaged segment of the area population (38%).

-- The educationally deprived segment of the area population (43%).

-- A diverse racial group in which the minority segment (Black, Spanish-speaking, Asian) is a significant portion of total enrollment (25% in current year vs. 29% in 1980).

-- Those who have special educational needs (34%).

UCCC operates a variety of programs to accommodate the special needs of its students.

-- Developmental education programs for credit (54.7% of all entering students need developmental English or math; 64.3% of all associate degree students read below the ninth grade level).

-- At least 72% of the students need financial assistance which they receive through established college programs or through outside employment.

-- Students with unusual needs for work skills and income are assisted through an education program.

The college has found itself in a series of controversies regarding its attempt to meet the needs of non-traditional and minority group students. The local newspaper, The Utopia Crier, last year ran a series of editorials

expressing disapproval ". . . of UCCC's attempt to finance, at the taxpayers' expense, so-called college programs for students unprepared for college level work." Much of the public's concern has also centered around the possible lowering of the college's standards.

Utopia County Community College students are typically hard working and ambitious. Most are vocationally oriented; approximately two-thirds initially seek admission into the college vocational and technical program leading to an Associate of Applied Science (AAS) degree. However, there is a definite tendency for a large percentage, as much as forty percent, to switch to one-year vocational (certificate) programs by the end of their first semester. College officials and the Board of Trustees are pleased with the increasing interest being shown in the vocational-technical programs but are concerned about the rather high attrition rate (62%) from the college transfer program. Concern also has been expressed regarding the irregular attendance patterns of many students. Some students take as many as five to six years to complete a two-year AAS program.

The academic quality of courses offered by UCCC is one of the primary reasons given by students for selecting the college. Not surprisingly, job placement of its graduates is another significant reason the college attracts students.

TABLE 3

Main Reason for Selecting the College

	Current Year	1980
Academic Quality in My Program	23.5%	23.2%
Courses Offered	28.9%	23.6%
Close to Home	17.5%	21.0%
Academic Reputation-General	10.0%	15.2%
Costs	9.1%	11.2%
Job Placement	11.0%	5.8%

A recent study of the college's graduates indicated that of those employed, 85.4% were working in fields related to their major field of study or had continued their education. In general 91% of the graduates surveyed were satisfied with the services and programs of the college. The highest rated college services were as follows: faculty advisement (89.4%), curriculum content (88.2%), and quality of instruction (84.3%), food service (51.2%), student activities (48.2%) and library (43.5%).

The College's Organization and Staff

Utopia County Community College originally emphasized its college transfer program. Approximately twelve years ago, under the leadership of a dynamic new president, the institution moved in the direction of becoming a comprehensive college offering two-year vocational- technical programs as well as continuing education and community service programs.

The educational programs and faculty of UCCC were recently organized into four divisions: general education, vocational and technical science, continuing education, and student services. The college transfer programs are administered by the Division of General Education while all two-year technical degree programs are a part of the Division of Vocational-Technical Science. The Division of Continuing Education offers non-degree programs that answer the community's need for short-term occupational programs and vocational and cultural activities which, over the years, has been a very limited effort. The Student Services Division is responsible for admissions, student records, financial aid, counseling, and student activities. Each of these four divisions is headed by a chairman who is responsible to the Dean of the College.

Currently, there are a few staff members who have increasingly expressed the opinion that the college's present organizational structure by division leaves some staff members relatively free, while others are overburdened. Furthermore, some faculty members (technical division) have very small classes while others (general education divisions) have their classrooms filled to capacity. Several faculty members have unsuccessfully introduced resolutions in the Faculty Senate calling for a more flexible

organization which will even out such differences and make for a more equitable distribution of workload.

The prevailing faculty philosophy at UCCC is reflected in a brief document drawn up by a faculty group at a recent staff development seminar. The following educational principles were accepted as the ". . . operational basis for developing healthy and effective aculty-administrator relationships . . ."

-- Utopia County Community College has one goal: The best possible education for its students.

-- Each member of the faculty has a unique contribution to make in the accomplishment of this common goal.

-- In a democratic society it can be expected that the members of any college faculty will desire to participate in decision-making that affects their welfare and the fulfillment of the purposes to which their effort is directed.

-- Effective participation and wise decision depends upon knowledge, experience, and a sense of obligation on the part of all concerned.

-- Realistic, responsible requests, formulated after careful consideration of resources and other pertinent data, are requisites for confidence and effective working relationships.

-- The president of the college, the institutional officers and the division heads cannot abdicate their individual responsibility for making decisions, regardless of how they were stretched, nor for the consequences of their decisions.

-- Responsible members of a profession can be expected to make the same decisions, assuming equal knowledge of facts and basic data.

Utopia County Community College has a well-run counseling and developmental studies center that is very well respected among two-year colleges. There are a number of achievement and aptitude testing programs carried on throughout the year and throughout a student's program of studies. In addition, students are always welcome to the center for

personal guidance and counseling. The center is staffed with seven professionally trained staff members, six men and one woman.

In the field of sports, the college also has an excellent reputation. UCCC's athletic teams take part in a number of state and regional competitions and have great success in comparison to most colleges. Students seem to like sports and are very interested in competitive intercollegiate sports. Many of the college's out-of-country and out-of-state students are attracted to UCCC because of the reputation of its athletic programs. Recently, some intramural programs have been initiated.

The College's Finances

Utopia County Community College receives its non-capital, unrestricted funding from four sources: state and local appropriations, student tuition and fees, and revenues from auxiliary enterprises. State monies have decreased somewhat as a percentage of the total budget for the past five years. Given current and projected state economic conditions, college officials expect these monies to continue to decrease in the future. Within the last three years, the State has imposed three mid-year budget cuts (e.g. 5%, 6%, and 4%) because of the declining revenues. During the same time, however, student FTE enrollment increased 15%. Last year, the operating budget for Academic Affairs was frozen at the previous year's level so that an associate degree computer program could be offered in response to overwhelming community demand. In that same year, however, the college experienced a 5% increase in enrollment. The following table shows a comparison of the percentage of total revenue by three of the sources for the current year and 1980.

TABLE 4

Major College Funding Sources as Percentage of Total Revenues

Year	State Appropriations	Local Appropriations	Tuition and Fees
1980	65%	7%	22%
Current Year	61%	7%	28%

The state also allocates to the institution portions of capital bond revenues for equipment purchases. However, again because of declining state revenues, the institution has received decreasing amounts of these monies for the last two years. UCCC receives fiscal support from two counties which accounts for 7% of the total budget over the last five years. These monies are not expected to increase over the near-term future as the counties struggle with replacement of lost federal monies and with maintenance of basic government services to citizens.

Funds from tuition and fees, as a percentage of the total budget, have increased over the past five years, due to enrollment increases. As state and local appropriations continue to decrease and operating costs continue to rise, the institution will be faced with the prospect of increasing revenues from these sources. Revenues from auxiliary enterprises, although expected to increase slightly over the next five-year period, only contribute about 3% to the total budget.

The college has historically made a commitment to seek external funds. Restricted monies come to the college from federal sources and from the Utopia Education Foundation. Last year, the institution was awarded $1. million in restricted federal funds in addition to $540,000 in federal student financial aid.

The other external source of funds available to the institution are those that come from a college-related foundation. The foundation currently has assets of $60,000 raised primarily through community fund-raising activities. These monies are almost entirely restricted to scholarships. The foundation has no endowment.

UCCC'S PLANNING PROBLEM

The President of UCCC has become increasingly concerned about the changing nature of the college's environment. As he surveyed the shifts in the composition of the college's student body and the growing instability of the institution's financial base, he began to fear that the institutional goals and objectives were not reflective of changes in the college's external environment. In discussion with the members of his cabinet, he discovered that they also shared his concerns and uneasiness regarding the responsiveness of UCCC to the changing environment of the institution. There was unanimity among the college's chief administrative officers that the institution's existing annual planning efforts did not facilitate the identification and linking of the type of information describing possible environmental changes to the formulation of relevant institution's objectives.

Accordingly, the President asked the college's Executive Vice-President to look into the possibility of developing a planning process that incorporated a strategic assessment of the trends and issues that would affect the college in the future. After some investigation and consultation with other members of the administrative staff, the Executive Vice-President engaged a group of management consultants to assist him in this task. The consultant group, after first reviewing the college's existing planning process, recommended that UCCC use the ED QUEST process as a starting point for developing an initial strategic planning effort. The college's administration accepted the recommendation and, after

reviewing the planning expertise within its own staff, decided to engage the consultant group to assist them in designing the process and in formulating the plan.

PREPARATION FOR ED QUEST

Prior to the actual ED QUEST session, a number of important decisions were made and tasks completed. First, the President, upon the recommendation of his cabinet, appointed the members of the ED QUEST planning team. Fifteen of the college's administrative and instructional staff, including the President, were selected to participate in the ED QUEST process. The functional areas of the college represented on the team were the following: instruction, continuing education and community service, student services, institutional research, institutional advancement, and library services.

Concurrently, the consultant group began the compilation of the Future Prospect Notebook. It consisted of material containing information and forecasts of environmental trends, issues, and developments which might have impact on the college's future (see Appendix A). Much of this information was obtained from materials and data bases to which the consultants had access. However, also included in the notebook were recent trend data on variables descriptive of the internal environment of UCCC (i.e., enrollment, revenue, etc.). This latter category of data was collected for the consultant group by UCCC's institutional research office.

Also at this time the consultants prepared an agenda (shown in Figure 13) for each of the two ED QUEST sessions. This agenda was reviewed with the administration and received their approval.

Once the ED QUEST team members had been appointed and the Future Prospect Notebook had been prepared, the consultant group met with the team. The purpose of the meeting was to provide the team with an overview of the ED QUEST process, and an explanation of the Delphi process. At the end of the meeting, the Futures Prospect Notebook was distributed to each team member along with a copy of the Round One (R1) questionnaire of the Delphi (refer back to Figure 5).

FIGURE 13

ED QUEST AGENDA

A. Agenda - Session I

1. Conduct overview of the session's objectives

   a. Identify mission elements
   b. Identify key indicators
   c. Identify strengths and weaknesses

2. Review masters list of trends and future events

3. Verifiy critical trends and events

4. Develop cross-impact analyis of events

5. Define the nature of UCCC

6. Assess of critical trends and events on UCCC

   a. Mission
   b. Key Indicators

B. Agenda - Session II

1. Conduct of the session's objectives

2. Develop implications for UCCC

3. Formulate preliminary strategic options

4. Assess strategic options on

5. Select strategic options

6. Determine follow-up activities

In the intervening month the members of the ED QUEST team, using the information and forecasts contained in the Future Prospect Notebook as well as information on other environmental trends and developments they gathered individually through their own reading and contacts, completed the first round of the Delphi and returned the form to the consultants.

The information from R1 was then used to prepare the R2 questionnaire. (see Appendix B). The statements of forecasted trends and events made by individual team members were edited and, in a number of instances, reworded to improve clarity. In addition, the consultant group added a number of forecast statements of their own to the questionnaire. This was necessary where the trends and events identified in the R1 responses of the ED QUEST team were not sufficiently comprehensive to thoroughly assess their impact on the institution.

When completed, the R2 questionnaires were distributed to the ED QUEST team. It consisted of two parts. The first part required each team member to give an assessment to the positive or negative importance to the college's future of a series of trend statements using a scale of 0 (no importance) to 10 (major importance). The second part of the questionnaire contained a series of statements describing a possible future event. Each team member had to provide two bits of information for each event: an estimate of the probability that the event would occur at some time within the next 10 years and, assuming the event did occur, an estimate of its impact, either positively or negatively, using a scale of 0 (no impact) to 10 (high impact).

Once the team members had completed the R2 questionnaires, the consultants tabulated the results. After analyzing the information, they prepared two lists. The first, a master list, contained all the trends and events statements included in the R2 questionnaire. The mean importance was shown for each trend as was the median probability and mean impact of the events that were assessed as having high impact for the college (see Figure 14). A minimum score of 6 was chosen as the cut-off for making the determination of importance and impact.

FIGURE 14

CRITICAL TRENDS AND HIGH IMPACT EVENTS

		Importance If Forecast Materializes In 12 Years
	A. Trends	
*T-2.	Industrial automation doubles	6.5
*T-4.	40% of local service area homes have micro-computers	6.5
*T-6.	Seventy percent of U.S. households have computerized devices	6.5
T-7.	Due in large part to the increasing median age of the American public, health care becomes a major growth industry	6.5
T-18.	The enrollment of adults in re-training programs in continuing education increases	7.3
T-21.	The "hands-on" dimension of instructional programs in high-tech fields assumes even greater importance than in the early 1970's	7.0
*T-22.	Larger numbers of unemployed adult students with poor learning/thinking/communications skills enter the college for retraining	6.5
T-25.	Community colleges experienced declining political support	8.5
*T-26.	Pressure for accountability in higher education has increased	6.5
T-28.	Costs for upgrading instructional equipment have increased significantly over the levels of 1980	9.0
T-30.	A reduced level of federal commitment to education is manifested by the decreased support to states and counties and a decline in the number of federal grants available	7.3
*T-37.	Thirty-five percent of high school graduates do not meet state standards (as defined in the Educational Improvement ACT of 1984) to qualify for admission to a four-year college	6.5
T-38.	Skills training becomes increasingly job-specific	8.0
T-39.	Unemployment in the textile industry reaches 20 percent	7.3

Figure 14 -Critical Trends and High Impact Events
Continued

T-40.	Most entry-level jobs require a higher skill level and, consequently, more educational preparation than in 1980	6.5
T-41.	The need for electronic technicians to maintain high-tech equipment has grown at an annual pace of 3 percent	7.3
*T-44.	Job demands for highly specialized technological workers expands	6.5
T-46.	The expanding "service economy" results in large numbers of lower-skill jobs, such as clerk and food-handlers	6.7

B. Events

		Probability of Occurring	Impact If it Occurs by 1996
*E-12.	Thirty-five percent of medical analysis and diagnosis is done by technologists using computerized processes	.50	6.5
E-3.	Eighty percent of production machinery is operated by numerical and computer controls	.65	6.5
E-5.	The automation of offices continues at the same rate as that of the early 1980's	.80	6.5
*E-8.	The proportion of high school graduates and an increasing number of older students (35 and above) seeking to upgrade their skills by entering post-secondary education reaches 65 percent	.75	6.3
E-14.	The region is not as effective in attracting industry as in the 1970's and early 1980's	.50	8.7
E-15.	The heightened manufacturing capability of developing countries in the areas of textiles, steel, and auto manufacturing presents increasing competition to U.S. industries	.85	6.7
E-22.	The federal government reduces by nearly a third its level of funding for student financial aid programs	.60	7.7
E-23.	All Trio programs suffer funding cuts, while higher percentages of matching funds are required	.75	7.0

Figure 14 - Critical Trends and High Impact Events
Continued

E-25.	Communications satellites become more economically feasible, resulting in new opportunities for teleconferencing and other alternative forms of educational delivery systems.	.75	6.5
*E-27.	The direction of technical education in the state has changed from the two-year college concept to basic training and short-term programs	.40	6.5
E-28.	Area vocational centers, two-year colleges, and four-year colleges find themselves forced to articulate more effectively	.50	7.3
E-29.	Industry increasingly calls upon the two-year colleges of the state to provide more and better occupational upgraing for employees and technology continues to change	.50	7.3
E-30.	The competition for students increases as two-year colleges, four-year colleges, the armed forces, and private enterprise go "Head to Head"	.60	6.7
E-31.	The higher costs of construction, plant operations (utilities), educational support services (computer, instructor salaries, and supplies) are placing major financial strains on educational institutions	.30	7.3
*E-35.	Many two-year colleges continue to rely heavily on part-time instructors	.60	7.0
*E-37.	Technological changes are requiring continuing changes in many existing technical education curriculums and the addition of several new ones.	.87	6.7

*Trends and events added to the list during session.

In addition to the two lists, two charts were created. One chart showed the importance of each trend according to four categories: high, strong, moderate, and low/none (see Figure 15). The other chart categorized the events according to their probability of occurrence (i.e., high, moderate, and low) and impact (i.e., high, moderate, and low), (see Figure 16).

First ED QUEST Session

The first ED QUEST session began with the consultants reviewing the session's agenda and objectives. The first team activity was a review of the results of the Delphi survey. a general discussion was held during which members of the team had the opportunity to raise any questions regarding the validity of the group's estimate for either a trend or event. arguments were presented for either adding or deleting a trend or event from the "Critical Importance and High Impact List". Although none were deleted a number of trends and events were added to the list.

The next major group activity was the completion of a cross-impact matrix to determine the interrelationship of each event to each of the trends and other events. The planning team members were formed into four groups. Each group completed a cross-impact assessment form using the scale of +3 to -3 to show should the impacting event occur, the increase or decrease of the significance of a trend on the college or the probability of the other events. When the group had completed their matrices, the results were tabulated algebraically for each cell, absolute values were obtained for each row and column. The information was recorded on a large matrix drawn on newsprint. The remaining time for the activity was spent identifying those events which appeared to be significant and forceful "actors" in the college's future were they to occur. Figure 17 shows an abbreviated version of the tabulated matrix.

The planning team then proceeded to assess the changes that might occur in UCCC's mission from the impact of the trends and events forecasted to be critical to the college's future. This was accomplished by the

Figure 15
Utopia County Community College
1985 Educational QUEST

Trend Importance

Rating Category	Trend
High (8.0 - 10)	T-25, T-28, T-38
Strong (6.0 - 7.9)	T-7, T-18, T-21, T-30, T-39, T-40, T-41, T-46
Moderate (3.0 - 5.9)	T-2, T-3, T-4, T-5, T-6, T-10, T-11 T-12, T-13, T-15, T-17, T-20, T-22 T-24, T-26, T-27, T-29, T-31, T-33 T-34, T-35, T-37, T-42, T-44, T-45 T-47
Low/None (0 - 2.9)	T-1, T-8, T-9, T-14, T-16, T-19, T-23, T-32, T-36, T-43, T-48

Figure 16
Utopia County Community College
1985 Educational QUEST

Probability/Impact Matrix

IMPACT

PROBABILITY	High 6.0 - 10	Moderate 3.0 - 5.9	Low/None 0 - 2.9
High .75 - 1.00	E-5 E-15 E-23 E-25	E-31 E-37 E-39	E-13 E-32
Moderate .50 - .74	E-3 E-8 E-14 E-22 E-28 E-29 E-30	E-1 E-41 E-7 E-11 E-12 E-18 E-27 E-33 E-34 E-35 E-38	E-19 E-24 E-26
Low 0 - .49	E-31	E-6 E-9 E-10 E-16 E-17 E-20 E-36	E-21 E-40

SUMMARY OF CROSS-IMPACT ASSESSMENT

Name of Organization Utopia County Community College

	EVENT	PROBA-BILITY	IMPACTED EVENTS: E-12	E-3	E-5	E-8	E-15	E-22	E-23	Absol. Impact
			1	2	3	4	5	6	7	8
1	E-12	.50		0	+1	+13	-1	-3	-1	19
2	E-3	.65	0		0	+15	-18	-2	0	35
3	E-5	.80	0	0		-18	-4	-3	0	25
4	E-8	.75	0	+5	+7		-9	-3	-5	29
5	E-15	.85	0	+20	+8	+18		-7	+5	58
6	E-22	.60	-4	-5	+6	-11	+2		+4	32
7	E-23	.75	0	-1	-2	-8	0	-3		14

Figure 17

participants being divided into three groups and each group considering the present circumstances at UCCC related to one of the following components of the college's mission: student/clients serviced, needs fulfilled, and programs/services offered. Each group recorded on newsprint its assessment and, when all groups had completed their task, reported back to the entire ED QUEST team who could modify the group's assessment if it so desired. Once all the assessments of present circumstances were completed, each group reconvened and assessed the future circumstances for its mission category. The objective of this activity was to identify the change in circumstances that could be brought about between the present and the future should the critical trends materialize and the future events occur (see figure 18).

Next, the planning team identified key indicators of UCCC's performance. Initially, a list of 32 indicators was developed from those suggested by members of the planning team. The consultants then had the team members individually select what they believed to be the 10 most critical indicators from this list. The results were tabulated; 12 indicators were identified from the entire list as being the most significant. Figure 19 shows the indicators most frequently selected.

Once the list of key indicators had been finalized, the group then assessed the impact of the critical trends and high impact events upon the indicators. The consultants divided the planning team into two groups and assigned each group six indicators. Using a scale of 0 - 10, each group assessed the positive or negative impacts of each trend and event upon each indicator. When completed, the consultants tallied the results showing the positive, negative and absolute impact of each trend and event on the entire set of indicators. Figure 20 shows an abbreviated version of this tallied grid.

The team then proceeded to develop a list of the most significant institutional strengths and weaknesses. Again, a preliminary list of strengths and weaknesses created from the perceptions of the participants in the ED QUEST process was reduced to the list shown in Figure 21. The completion of the identification of the institution's strengths and weaknesses ended the UCCC's planning team first ED QUEST session.

FIGURE 18. ELEMENTS OF UCCC'S PRESENT MISSION

PRESENT CONDITIONS AT UCCC

A. Student/Clients

1. Students (i.e., high-school grads., upgrades, etc.)
2. Area employers
3. Public/non profit organizations
4. Community groups
5. Displaced workers
6. UCCC's staff
7. Reverse transfer students
8. Adult Ed. students

B. Needs Satisfied

1. Entry level occupational/job skills
2. Upgraded occupational/job skills
3. New occupational/job skills
4. Basic educational skills and/or credentials (i.e. reading, GED, etc.)
5. Counseling assistant/information (i.e., ed. obj., career path; educational competencies)
6. Avocational interests

C. Programs/Services

1. On-campus credit instruction
2. Off-campus credit instruction
3. On-campus non-credit instruction
4. Off-campus non-credit instruction
5. In-plant training
6. Student support services (i.e., placement, counseling, etc.)
7. Job training and partnership act (JPTA)
8. Conference facilities
9. Technical assistance/technology transfer

FUTURE CHANGES AT UCCC

A. Clients

1. High school graduates enrolling in UCCC because of loss of financial aid at four-year colleges increase.

2. Students interested in small business mnagement skill increase.

3. "Recycled" students ("grads;" "alumni") increase.

4. "Non-mobile" students increase.

Figure 18 - Elements of UCCC's Present Mission
Continued

5. "Traditional" transfer students increase.

6. Increase in number of voc-ed center graduates desiring advanced placement credit increase.

7. Other types of trainers/educators increase.

B. Needs

1. Need more assessment for displaced workers.

2. Need more information on markets and application of new technology for local industry.

3. Need increased emphasis on basic skills.

4. Need problem-solving competencies.

5. Need more orientation assistance of displaced workers to educational/learning environment.

6. Need more integration of career counseling with development of new job skills.

7. Need more counseling assistance by all segments of population.

C. Services

1. Establish services to teachers and trainers.

2. Establish two-way video/instructional services to improve educational delivery to off-campus students.

3. Increased service in off-campus credit and non-credit institution.

4. Increase service to provide technical assistance /technology transfer via teleconferencing.

FIGURE 19. INDICATORS OF INSTITUTIONAL PERFORMANCE

1. Curriculum Enrollment (Credit House Generated)
2. Continuing Education Enrollment (Contact Hours Generated)
3. Student/facility Ratio
4. Cost per Credit Hour
5. Graduate Placement Rate
6. Student Retention Rate
7. State Government Funds
8. Local Government Funds
9. Federal Government Funds
10. Institutional Expenditures
11. Full-time/Part-time Staff Ratio
12. Annual Number of Graduates

Figure 20
Impact on Key Indicators
(Abbreviated Version)

TRENDS/EVENTS No.	Curriculum Enrollment (Cr. Hrs.)	Cont. Ed. Enrollment (Cr. Hrs.)	Student/Faculty Ratio	Cost Per Credit Hour	Placement Rate	Retention Rate	State Funds	Local Funds	Federal Funds	Expenditures	FT/PT Staff Ratio	Number of Graduates	Total Positive/Negative	Absolute Impact
T-2	+7	+5	0	+2	0	+4	+3	0	+5	-7	+9	0	35/7	42
T-7	+5	+5	0	+2	+2	-3	-9	-2	-8	0	+5	0	19/19	38
T-18	+5	+6	+3	-2	+9	+2	+3	+4	0	+4	-2	+4	40/4	44
T-25	0	0	+3	+3	0	0	-7	-6	-2	0	-3	0	6/16	22
E-5	+6	+5	0	+4	+8	-2	0	0	-2	+5	+7	+4	39/2	41
E-8	-5	0	-3	+4	+6	+6	0	+2	0	+2	0	+3	20/8	28
E-14	-4	-9	-6	+6	-8	+7	-7	-7	-5	+6	+5	-4	24/50	74
E-22	-3	0	0	-6	0	-6	0	-6	-8	-8	-5	-4	0/48	48

FIGURE 20
Impact on Key Indicators
(Abbreviated Version)

FIGURE 21. MAJOR STRENGTHS/WEAKNESSES OF UCCC

A. Strengths

Item No.
Original List

#1 Attractive campus
#2 Dedicated Faculty
#6 Frontrunner in Innovation, etc.
#7 Strong engineering tech. program
#13 Flexibility in programming
#5 Talented personnel
#14 Caring environment
#17 Developmental education
#23 Strong and capable leadership
#18 Courses tailored to industry
#28 Role in economic development

B. Weaknesses

#42 Not seen as higher education
#31 "Fine for somebody else's child"
#22 Insufficient funding
#4 Too few transferable credits
#3 Too much use of adjunct faculty
#9 No consistent funding pattern
#36 Lack of residence halls
#14 No time for faculty to develop new courses/programs
#8 Not enough up-to-date training equipment
#32 Compensation system for adjunct faculty does not allow UCCC to demand competency

INTERIM PERIOD

During the interim period between the first and second ED QUEST session, the consultants developed a series of scenarios showing the alternative institutional environments, UCCC might have to contend with in the future. These scenarios were constructed using the planning team's assessments from the first session. Specifically, the consultants draw on the following products from the session: the list of critical trends and events, the assessment of change in the college's mission, the assessment of changes in the organization's performance indicators, and the cross-impact matrix.

The consultants began the development of each scenario by identifying from either the cross-impact matrix or the key impact assessment an event that was assessed by the team as having a powerful impact. Using a form of impactnetworking, the consultants began to list the "actor" event to other events and trends that it impacted. These first order impacts were in turn linked to the events and trends they impacted. This process was repeated until the analysts decided the scenario was sufficiently "rich" in identifying the salient factors in that particular future.

Once the impact network was completed to the satisfaction of the analysts, it was put into written form and critiqued. If necesary, a scenario was then "fined tuned" as to its readability, pausibility and internal validity and rewritten. A number of the scenarios prepared for the UCCC team's analysis are contained in Appendix D of this manual. A set of the scenarios was then distributed to each member of the UCCC planning team along with a request to read them prior to the second ED QUEST session.

THE SECOND ED QUEST SESSION

The consultants began the second session by reviewing the objectives for the ED QUEST process at UCCC and the outcomes of the initial session. They then briefly reviewed each scenario and its primary characteristics. Once this review was completed the planning team was divided in two groups. Each group was assigned a scenario and requested to analyze the scenario in terms of its plausibility and its implications for the college. During

this analysis, a member of the group recorded the implications identified by the group on newsprint provided to each group. Upon completing the review of all scenarios, each group reported back to the entire team. The other members of the planning team were encouraged to comment on the analysis and suggest additional implications. To illustrate this process, Figure 22 list the implications identified by the UCCC team for two of these scenarios: The High Tech Imperative and the Economic Malaise.

After establishing a list of implications for each scenario, each group then proceeded to develop a preliminary list of strategic options based on the implications previously identified and on the extent the strategy would facilitate the college successful adapting to the environmental change forecasted in the scenario. In instances where the list contain strategic options that were more operational in nature, statements were revised or combined to reflect a more strategic thrust. The preliminary list of strategic options developed for one of the scenarios is shown in Figure 23.

Using the strategic option matrix, and a scale of +10 (greatly enhance) to -10 (greatly diminish), each group the assessed the impact of each of the options on each of the strengths and weaknesses identified in the previous ED QUEST session. A matrix was prepared for assessing the strengths and another for weaknesses (see Figure 24a and 24b).

The optimum strategic options to implement were identified by algebraically summing the rows on each matrix to determine which options enhanced the college's strengths and diminished the college's weaknesses. The options shown in Figure 25 which are astrisked were the ones selected by the UCCC team for implementation for the particular scenario.

FOLLOW-UP ACTIVITIES

Follow-up activities based upon the outcomes of UCCC's ED QUEST process began at the President's first cabinet meeting following the second session. Personnel were assigned responsibility for developing more detailed plans for each strategy. Each of these action planning committees were assigned to an administrator of the college whose responsibilities were most closely alighted to the focus of the strategic option. Each committee's activities were monitored by the Executive Vice-President and

FIGURE 22. IMPLICATIONS OF SELECTED SCENARIOS FOR UCCC

A. The High Tech Imperative

1. Average faculty salary up
2. More emphasis on developmental; longer duration for students
3. More full-time faculty in technical programs
4. Fewer full-time faculty in non-technical programs
5. Dollar drain for equipment
6. Fewer students (selectively in admissions)
7. Creative individualized scheduling (as opposed to "lock-step" approach)
8. Interdepartmental stress, competition
9. Specialization across all colleges
10. Technological literacy for all
12. Heavy faculty training regarding technological literacy, how to teach
13. Fewer, broader programs of study--with follow-up specialized training.
14. New forms of cooperation with industry (OJT, shared "experts," etc.)
15. Focus on competence-based teaching--be efficient and effective (to fit more into less time)
17. More students.

B. The Economic Malaise

1. More part-time instructors
2. Large increase in headcount--moderate increase in FTE
3. Large increase in short-term skills training courses
4. Significant increase in Federal support, with more control, accompained by reductions in state funding
5. Lower county budgets
6. Significant retrenchment in support areas of budget
7. Higher skilled graduates leave servic area
8. Development of short-term training for cottage industries
9. Expansion of JLTPA staff and funding
10. Building programs grind to a halt
11. Increase in high school student enrollment
12. Increased emphasis on job placement both inside and outside service area
13. Closer relations with industries for joint survival
14. Development of new programs linked to placement
15. Greater percent of students receive financial aid
16. Increase in Developmental Studies enrollment
17. Diminished credibility with four-year institutions

FIGURE 23. Preliminary Strategic Options for The Economic Malaise

1. Enhance programs/services image of institution to emphasize value of people, to offset low moral which is likely per this scenario.

2. Encourage governmental entities to establish a millage basis for local support.

3. Expand the programs and services to handle re-training needs of community.

5. Improve quality of part-time instruction through better pay, administrative support and increased respect for adjunct faculty.

6. Streamline the core math program, resulting in fewer courses each quarter.

7. Build closer ties among developmental studies, the curricula, and the math department to assure efficiency in instructional delivery.

8. Provide increased support for all courses which contribute to literacy, communications skills, and cultural sophistication.

9. Assume responsibility, as a part of the state's two-year college system, for economic development in this region.

10. Increase size of developmental education faculty/staff as this division becomes largest on campus.

11. Establish long-term retrenchment in terms of library materials, space, services (as telecommunications).

12. Increase the number of short-term highly specialized courses offered in industrial locations.

13. Extend and expand placement service to assist dislocated workers support area.

14. Improve the supervision and job performance of part-time instructors.

15. Improve ability to obtain state and federal funds for on purchase of up-to-date equipment.

16. Revise the college's curriculum by eliminating out-dated degree programs and increasing high quality/high tech programs.

17. Increase emphasis on broader math/reasoning/problem solving general education program.

18. Establish a resource center equipped with microcomputers, books, audio/video cassettes and clerical support to encourage establishment of small business incubator program.

Figure 23 - Preliminary Strategic Options for the Eonomic Malaise
Continued

19. Develop a technological arts major within the college to educate technical generalists.

20. Emphasize generic "success skills" in the curriculum

21. Develop computer resource center to support area business and industries changing to high-tech.

STRATEGIC OPTION IMPACT MATRIX
(ORGANIZATIONAL STRENGTHS)
(ABBREVIATED VERSION)

STRATEGIES	STRENGTHS								SUM
	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	
1. Establish computer resources	+6	+1	+9	+8	+3	+8	+6	0	+43
2. Upgrade quality of Math, Human Rel. and Comm.	+9	+10	+9	-1	+9	-4	+10	+3	+47
3. Strong program in faculty development	+2	+9	+9	+1	+10	-8	+2	+2	+27
4. Contractual arrangment with business/industry	0	+10	+8	-6	+2	+10	+9	0	+36
5. Create small business incubator program	+9	-1	-1	+2	+7	+8	+7	0	+31
6. New role/status for part-time faculty	+4	+2	+2	+9	-5	+6	+2	+4	+24
7. Establish Technical Comm. curriculum	+5	+10	-1	+6	+9	+6	-3	0	+32
8. Develop "Technological Arts" major	+4	+10	+9	+6	-2	+9	+10	+4	+50
9. Broaden math/reasoning/general ed. program	+2	+8	+8	-2	+9	+9	+10	+2	+53
10. Provide all training needs for local bus./in	0	+9	-1	+10	+9	+10	+8	0	+45

Figure 24a

STRATEGIC OPTION IMPACT MATRIX
(ORGANIZATIONAL WEAKNESSES)
(ABBREVIATED VERSION)

STRATEGIES	WEAKNESSES								
	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	SUM
1. Establish computer resources	-10	-6	-7	-3	+5	0	+5	-10	-26
2. Upgrade quality of Math, Hum. Rel. and Comm.	0	-9	-1	+1	+1	-1	-10	-10	-29
3. Strong program in faculty development	+2	-10	+2	-4	+8	-4	-4	+3	-7
4. Contractual arrang. with business/industry	-8	+6	-10	-10	+6	+10	-1	+4	-3
5. Create small business incubator program	-4	-4	-4	-4	-10	+8	-10	+4	-24
6. New role/status for part-time faculty	0	-10	+2	+8	+5	-8	+2	-5	-6
7. Establish Technical Comm. curriculum	+5	+2	-6	+2	-6	+4	+3	-5	-1
8. Develop "Technological Arts" major	-3	+8	+8	-8	-7	-4	0	+5	-1
9. Broaden math/reasoning/general ed. program	-2	-4	-9	+7	-5	-3	-8	+7	-17
10. Provide all training needs for local bus./ind	+3	+4	-4	-10	-4	+4	-5	-2	-14

Figure 24b

FIGURE 25 – ASSESSMENT OF STRATEGIC OPTIONS

Strategies

1. Establish a computer resource center. (+43/-26)

2. Upgrade quality of overall student development in Math, Human Relations, and Communications. (+47/-29)

3. Establish a strong program of faculty development as major priority of administration and staff. (+27/-7)

4. Develop contractual arrangements with business and industry to provide for shared use of personnel, equipment, and facilities. (+36/-3)

5. Create a small-business "incubator" program. (+31/-24)

6. Develop a new and expanded role/status for part-time faculty. (+24/-6)

7. Establish a Technical Communications curriculum. (+32/+34)

8. Develop a "Technological Arts" major within the college that provides a broad, general educational base for most PTC students. (+50/-1)

9. Adopt a broader math/reasoning/problem-solving general education program with a strong emphasis placed on communications skills. (+53/-17)

10. Build on strong partnerships with area business and industry to provide all training needs for present and future employee. (+45/-14)

11. Establish within UCCC a center/program of providing area business and industry with information needs, and consultation that takes advantage of latest technological methods. (+25/+12)

12. Emphasize generic "success skills." in the curriculum. (Produce broadly successful people, not narrowly trained workers; build college PR/Marketing around this.) Generic "Success skills" defined: Communications, Human Relations, Reasoning, Numerical/Quantitative, Learning to Learn, Computer Literacy. (+43/-10)

it was required to periodically report back to the President and cabinet of the progress made in implementing the option.

For example, the college's Director of Computer Services chaired the committee assigned the task of developing a plan for establishing a computer resource center. This committee consisted of several faculty members from the computer science department and the Assistant Director of Continuing Education. Once the committee had developed the plan, and it had been approved by the administration, each member of the committee took responsibility for accomplishing specific tasks such as procuring hardware and software, developing short-term training programs and marketing the services offered by the center.

A similar process was followed in implementing the other strategies. Thus, the ED QUEST process at UCCC as an initial approach to strategic planning became an impetus for the college to begin adapting to its environment by first scanning the environment for emerging change.

PART III

Institutionalizing Environmental Scanning In The Strategic Management Process

INTRODUCTION

QUEST stands for quick enviromental scanning technique. It is designed to facilitate a relatively quick analysis of the external environment, and the use of this information in developing alternative futures so that the institution can plan and manage strategically. An ED QUEST process t[illegible]n enables the institution to clarify its future, define its options, and, therefore, enables it to "get out in front of" anticipated changes in the environment. However, for the institution to develop the capacity to stay out in front, it must institutionalize the process. That is, it must develop an on-going environmental scanning system to supplement and continuously update the set of critical trends and events developed in the ED QUEST process. In this section, we describe how a college can establish an on-going environmental scanning process.

PROGRAM STRUCTURE

The initial structure of the program could be quite simple. The scanning committee chair could be one of a number of people, i.e., the assistant to the president for planning, the executive assistant to the president, or the director of institutional research. In any event, all of these individuals should be involved because of the relationship of the scanning program to planning. The director of institutional research in particular should be involved because the institutional research office is an appropriate repository of the hard copy data collected in the process. This would be in keeping with a national trend where IR offices are becoming responsible for collecting external enviromental data as well as internal data. Because of the relationship of environmental scanning to the entire planning process, the chair of the scanning committee should also be the leader of the ED QUEST team. The committee itself should include at least one senior level administrator representing each of the major functional area of the college (e.g., student affairs, business, development, and administration) and faculty members/departmental chairs

from sociology,political science, economics, computer science, etc. It may also be appropriate for all members of the ED QUEST team to be members of the scanning committee.

The primary role of a scanning committe is to conduct analysis and evaluations of scanning abstracts on a monthly or bimonthly basis. Thus the scanning committee would perform the initial "cut" of the information provided by scanners, i.e., they would evaluate abstracts, identify the trends and events they consider of the most import to the institution's strategic planning process, and submit this analysis to the committee which makes recommendations directly to the chief executive officer for implementation.

It is estimated that after the system is operating, the chair would spend half to three-quarters of his/her time managing and coordinating this activity. Members of the scanning committee would spend two to four days a month in committee activites. Scanners would probably spend an additional four to eight hours per month writing abstracts. (This assumes a broad base of scanners assigned only one or two information resources.) The latter estimate does not include, of course, the time they would actually spend in scanning. An alternative to scanners writing abstracts (see below for the requirements of writing abstracts) would be employing one or two part-time students assistants to write abstracts of materials submitted by scanners. This alternative has the advantage of encouraging the submission of material (which may be inhibited if the scanner is required to write abstracts), but it also has the disadvantage of not having senior level people submitting impact assessments of the information they send to the committee. Therefore, scanners should be given the option of writing abstracts or of submitting material directly.

OBTAIN VOLUNTEER SCANNERS

One approach to describe the program and gain organizational acceptance/endorsement throughout the institution, is to offer a series of half-day workshops for each functional unit of the institution (open to all

or by invitation only) which focus on the future, ways of studying the future and techniques of environmental scanning. These workshops would enable participants to experience the value of bringing their individual knowledge of the external environment to organizational knowledge in a structured and intuitively sound fashion and should result in volunteers to participate as scanners in the environmental scanning program.

An alternative approach would be to place a "call for scanners" in the institutional newsletter. This "call" would describe the environmental scanning process, how it fits into the institution's strategic planning process, and the responsibilities of scanners. Volunteers would then participate in a workshop. The advantage of this alternative is that it would not require a workshop in every unit of the college, and, therefore, would facilitate getting started.

DEVELOP THE SCANNING TAXONOMY

The workshops could be accompied by an "internal scan" of senior administrators, including academic department chairs, focusing on the question: "What trends, events, and emerging issues in American and global society do you see which have implications for our institution?" Another approach would be to ask respondents, "What are the critical success factors inherent in accomplishing our mission? and second, "What trends, events, and emerging issues in our society do you see that will affect these critical success factors?" This scan can be done through a one-on-one interview lasting one to two hours.

In addition to the information acquired in the workshops and the individual interviews, a review of literature to identify previous scans of trends and events which have implications for the institution could be conducted. For example, reference librarians could do a computer search of trends collected by a variety of agencies (Federal and otherwise), as well as a literature search for articles focusing on the future of careers, technology, etc. Much of this literature would have already been collected when developing the future prospects notebook for the in ED QUEST session.

It is important at this point to emphasize that the trends and events identified through workshops, interviews, and literature reviews, be translated in order to provide direction for the environmental monitoring data base. That is, trends and events must be stated clearly, and in measurable terms in order to guide data collected. For example, a trend may be conceptualized as, "the changing student body profile," but data cannot be collected to measure this trend unless it is stated something like, "the number of all full-time students over the age of 35."

The results of this activity should constitute the rough draft of a scanning taxonomy. This draft can be supplemented with adopting or modifying taxonimies used by other institutions e.g., the University of Georgia's Center for Continuing Education (see Figure 26) or the United Way of America Environmental Scanning Committee (see Figure 27). It may take a year or so of experience before the taxonomy would become relatively stable and sufficiently comprehensive. It is important to develop a comprehensive taxonomy, however, in order to use an electronic filing system.

ORGANIZE THE FILES ELECTRONICALLY

Electronic files facilitate review, referral and updating. Moreover, through using an electronic filing system, it will be easier to develop consortium relationships with similar institutions or with institutions in the same geographic area. Such a consortium could easily enrich the data base of abstracts. One electronic system that should be investigated is the one used by the United Way, Prudential, and United Airlines (Mist Plus, a software program produced and marketed by Micro-Computer Information Support Tools, New Era Technologies Incorporated, 2025 Eye Street, N.W., Suite 924, Washington, D.C. 20006, phone 202-296-6277). The scanning program at the University of Minnesota uses dBase II. Given the computer support system available at most institutions, it is recommended that the specific filing system be developed from existing commercial software (dBase II, Lotus 1-2-3, etc.) and implemented at the institutional computing center.

ENVIRONMENTAL SCANNING TAXONOMY

PROJECT-SCAN--GEORGIA CENTER FOR CONTINUING EDUCATION, UNIVERSITY OF GEORGIA

NOTES

1. The SCAN taxonomy serves to:

o indicate the parameters of active scanning of trends, issues, and events which are of major concern in strategic planning for the Georgia Center;
o organize the SCAN hardcopy files (abstracts and original references submitted by scanners);
o organize SCAN input for computer storage and retrieval by taxonomy codes and cross-reference codes.

2. The taxonomy is a dynamic scanning aid. It will change as necessary to better serve strategic planning. This first draft is modeled after the United Way taxonomy with numerous additions/deletions to better reflect the Georgia Center.

3. "Related Subjects" are not all-inclusive. Scanners should submit abstracts on any subject that has significant implications for the Georgia Center.

4. The taxonomy should guide active scanning of all continuing resources (print and media).

FILE	FILE NAME	RELATED SUBJECTS
F-FUTURE		
F-1	FORECAST SUMMARIES 1980s to 2000	FORECASTS OF CHANGES TO COME 1980s to 2000 (inc. social, economic, political, technological, "Information Age," "Learning Society," etc.) F11
F-2	FORECAST SUMMARIES 2000 and beyond	FORECASTS OF CHANGES TO COME (2000 and beyond) F21
F-3	FUTURES STUDY/RESEARCH	TECHNIQUES OF FUTURES STUDY (include environmental scanning, forecasting, issues management, strategic planning, Delphi, scenario dev., etc.) F31 HISTORY/PHILOSOPHY OF FUTURES STUDY F32 RELATIONSHIPS: PAST, PRESENT, AND FUTURE F33

FILE	FILE NAME	RELATED SUBJECTS
S-SOCIAL		
S-1	U.S. POPULATION SIZE/ COMPOSITION/MOBILITY	U.S. POPULATION GROWTH/SIZE (include projections) S11 AGING POPULATION/ELDERLY S12 BABY-BOOMERS S13 YOUNG ADULTS S14 AGE DISTRIBUTION S15 ETHNIC DISTRIBUTION S16 REGIONAL MIGRATION S17 IMMIGRATION TO U.S., esp. southeast S18
S-2	DEMOGRAPHIC OVERVIEWS	OVERVIEWS OF VITAL AND SOCIAL STATISTICS OF POPULATIONS and the effect on social and economic conditions.
S-3	VALUES AND ATTITUDES	NATIONAL "MOOD" (pos./neg., confidence in institutions, readiness for change, etc.) S31 ATTITUDES ON MAJOR ISSUES S32 AMERICAN VALUE SYSTEMS (include liberal, conservative, religious, humanistic, family, work, litigation, leisure, etc.) S33 GENERATIONAL VALUES S34 SOCIAL TRANSFORMATION S35 SOCIAL MOVEMENTS (include peace, environmental, women's, minorities, human rights) S36
S-4	LIFESTYLES	AGE GROUPS (include young adults, older adults, elderly) S41 SOCIOECONOMIC DIFFERENTIATIONS (include white collar, middle-income, professional, adult students, academic, etc.) S42 ALTERNATIVE LIFE STYLES (singles, families, working couples, single-parents, etc.) S43

FILE	FILE NAME	RELATED SUBJECTS
S-5 S-5G	U.S. EDUCATION GA EDUCATION (Global Concerns)	PUBLIC SUPPORT FOR EDUCATION, esp. public opinion polls (2) EDUCATIONAL QUALITY (Include reports of various national studies) (3) LITERACY/ILLITERACY (4) xxxxxxx COMPUTER LITERACY/see T3 xxxxxxx COMPUTERS IN EDUCATION/see T3 ALTERNATIVE/EXPERIMENTAL TEACHING AND LEARNING MODELS (5)
S-6	EDUCATION, LIFELONG	LIFELONG LEARNING/EDUCATION, as a concept S61 PRE-SCHOOL EDUCATION S62 ELEMENTARY EDUCATION S63 HIGH SCHOOL EDUCATION S64 VOCATIONAL EDUCATION S65 xxxxxxx HIGHER EDUCATION /see S-7 xxxxxxx CONTINUING EDUCATION/see S-8 ON-THE-JOB EDUCATION (Include corporate/business programs) S66 PROFESSIONAL ASSOCIATIONS S67 SELF-DIRECTED/SELF-PACED EDUCATION S68 OTHER/ALTERNATIVE LIFELONG LEARNING OPTIONS S69
S-7 S-G7 S-UG7	HIGHER EDUCATION, U.S. GA. HIGHER EDUCATION UNIVERSITY OF GEORGIA	GOVERNANCE (1) LEGISLATIVE ISSUES (2) STATE MODELS (Include University System of Georgia) (3) STRATEGIC PLANNING (4) ALUMNI SUPPORT (5) PERSONNEL ISSUES (6) FINANCIAL ISSUES (7) ADMINISTRATIVE ISSUES (8) STUDENT ISSUES (9) TEACHING/CURRICULA ISSUES (10) RESEARCH ISSUES (11) xxxxxxxExclude Biotechnology/seeT-7 PUBLIC SERVICE ISSUES (12) TECHNOLOGY ISSUES (13) OTHER ISSUES (Include athletics, church-state) (14) LAND GRANT CONCEPT (15) ENROLLMENT TRENDS (16) RELATIONSHIPS (Include private sector, other universities, Federal govt., states) (17) GRANTS/CONTRACTS (18) ALTERNATIVE FUTURES (19)

FILE	FILE NAME	RELATED SUB
S-8 S-8G	HIGHER CONTINUING AND ADULT EDUCATION, U.S. GA. HIGHER CONTINUING AND ADULT EDUCATION	GOVERNANCE ISSUES (1) LEGISLATIVE ISSUES (2) ALTERNATIVE MODELS (3) STRATEGIC PLANNING (4) PROFESSIONAL ISSUES (5) THEORETICAL ISSUES (6) PRACTICAL ISSUES (7) PERSONNEL ISSUES (8) FINANCIAL ISSUES (9) ADMINISTRATIVE ISSUES (10) STUDENT ISSUES (11) NON-CREDIT TEACHING/CURRICULA ISSUES (12) CREDIT TEACHING/CURRICULA ISSUES (13) PROGRAM DEVELOPMENT ISSUES (14) TECHNOLOGY ISSUES (15) DELIVERY SYSTEMS (16) RESIDENTIAL CONFERENCE CENTERS (17) RELATIONSHIPS (Include private sector, states, Federal govt., international concerns) (18) GRANTS/CONTRACTS FUNDING (19) ALTERNATIVE FUTURES (20)

Ga. Center/Kellogg Programs .....

Adult Counseling (141)
Americ Language Program/ Engli as a 2nd language (142)
Arts and Sciences (143)
Business Education (144)
Certificate Programs (145)
Continuing Education for the Professions (146)
Disaster Preparedness (147)
Energy Education (148)
Evening Classes (149)
Forestry (150)
Gerontology (151)
Governmental Training (152)
Health (153)
Home Economics (154)
Independent Study (155)
Music (156)
Pharmaceutical Svcs. (157)
Recreation/Leisure (158)
Self-directed, self-paced learning (159)
Social Work Cont. Ed. (160)
Veterinary Medicine (161)

S-9	PHILANTHROPY	LEVELS/PATTERNS OF GIVING IN HIGHER EDUCATION (limit to corporations and private foundations) S91 PRIVATE-PUBLIC COOPERATION S92 BUSINESS VENTURES BY NON-PROFIT ORGANIZATIONS S93 VOLUNTARISM S94 ETHICS IN GRANTMAKING AND GRANTSEEKING, esp. as affect educational transactions S95

BEST COPY AVAILABLE

FILE	FILE NAME	RELATED SUBJECTS
E-ECONOMIC		
E-1	U.S. ECONOMIC GROWTH AND DECLINE	FORECASTS OF ECONOMIC GROWTH AND DECLINE IN U.S. AND GEORGIA (1) ECONOMIC STRUCTURAL CHANGE (2)
E-1G	GA.ECONOMIC GROWTH AND DECLINE	
E-2	GLOBAL ECONOMY	FORECASTS OF GLOBAL ECONOMY (1) FOREIGN TECHNOLOGY (2)
E-3	U.S. INDUSTRIAL DEVELOPMENT/ BUSINESS GROWTH	GROWTH AND DECLINE (1) BUSINESS/INDUSTRIAL FUTURES (2)
E-3G	GA. INDUSTRIAL DEVELOPMENT/ BUSINESS GROWTH	NEW BUSINESSES/ENTREPRENEURISM(3) MINORITY BUSINESSES (4) AGRICULTURAL GROWTH/DECLINE
E-4	U.S. EMPLOYMENT/LABOR FORCE	LABOR FORCE COMPOSITION (include aging, minorities, women) (1) AAFFIRMATIVE ACTION/EEO (2) FAIR LABOR LAWS esp. as applied to educational and governmental entitites (3)
E-4G	GA. EMPLOYMENT/LABOR FORCE	
E-5	U.S. UNEMPLOYMENT	UNEMPLOYMENT FORECASTS (1) INNOVATIVE SOLUTIONS (2) JOB TRAINING/RETRAINING (3)
E-5G	GA. UNEMPLOYMENT	
E-6	WOMEN/EMPLOYMENT AND INCOME	WOMEN IN LABOR FORCE E61 PAY EQUITY/PENSIONS E62 WOMEN'S INCOME/EARNINGS E63 JOB OUTLOOK FOR WOMEN E64
E-7	OCCUPATIONS	OCCUPATIONAL OUTLOOK E71 EMERGING OCCUPATIONS E72
E-8	CHANGING WORKPLACE/ WORK FORCE	CHANGING WORLD OF WORK (include changing employee attitudes, work ethic, baby boom workers, workplace of the future) E81 ALTERNATIVE WORK SCHEDULES (include flextime, job sharing, parttime) E82 ALTERNATIVE WORK ARRANGEMENTS (include employee leasing, job shopping, temp. employment, work at home) E83 WORKER PARTICIPATION E84 NEW MANAGEMENT STYLES E85
E-9	CONSUMERISM	CONSUMER RIGHTS, EDUCATION, MOVEMENTS E92 CONSUMER PROFILES (inc. baby boomers, young adult, middle aged, young-old/retired) E94 MARKETING STRATEGIES, esp. of education programs/products E95
E-10	RESOURCES/ENVIRONMENT	ENERGY E101 WATER E102 AGRICULTURAL/FOREST RESOURCES E103 ENVIRONMENTAL POLLUTION E104 WORK ENVIRONMENT E105

FILE	FILE NAME	RELATED SUBJECTS
P-POLITICAL		
P-1	WHITE HOUSE	POLICIES/INITIATIVES, esp. as affect education P11
P-1G	GA. GOVERNOR'S OFFICE	
P-2	CONGRESS	LEGISLATION/INITIATIVES, esp. as affect education P21
P-2G	STATE LEGISLATURE	
P-3	SUPREME COURT/U.S. DISTRICT COURTS	CASES/DECISIONS esp. relevent to education P31
P-3G	GA. STATE/LOCAL COURTS	
P-4	ELECTORATE (AT LARGE)	OPINION POLLS (citizen opinio and reaction to major politic issues) P41 POLITICAL PARTICIPATION P42 POLITICAL CONSERVATISM/ LIBERALISM P43 BABY BOOM POLIT. INFLUENCE P44 AGING POPULATION INFLUENCE P45
P-4G	GA. ELECTORATE	
P-5	U.S. GOVT. REVENUES	TAXES P51
P-5G	GA. STATE/LOCAL REVENUES	TAX REFORM P52
P-6	U.S. GOVT. EXPENDITURES	EXPENDITURES/DEFICIT/SURPLUS (esp. as affects education) P6
P-6G	STATE/LOCAL GOVT. EXPENDI- TURES	HUMAN SERVICE EXPENDITURES P62 GRANTS/CONTRACTS (education) P6
P-7	NEW FEDERALISM	FEDERAL BLOCK GRANTS P71 PRIVATE SECTOR INITIATIVES P72 FEDERAL SOCIAL POLICY/NEW P73 FEDERALISM P74
P-8	GOVERNMENT REGULATION	GOVERNMENT REGULATION, esp. as affects education) P81
P-9	LITIGATION	LITIGATION, esp. as affects education P91

T-TECHNOLOGY (OVER)

BEST COPY AVAILABLE

FILE	FILE NAME	RELATED SUBJECTS
T-TECHNOLOGICAL		
T-1	TECHNOLOGICAL OVERVIEWS	TECHNOLOGICAL OVERVIEWS T11 HUMAN IMPACT OF TECHNOLOGY (include Naisbitt's "high touch" concerns) T12 HIGH TECH FUTURES T13
T-2	HIGH TECH WORKPLACE/ WORKFORCE	WORKFORCE SIZE/COMPOSITION T21 HIGH TECH WORKPLACE T22 HIGH TECH JOBS T23 EDUCATION FOR HIGH TECH (esp. overviews) T24
T-3	COMPUTERS	COMPUTER LITERACY T31 USAGE IN SECONDARY EDUCATION T32 USAGE IN POST-SECONDARY EDUCATION (include continuing education delivery systems) T33 USAGE IN VOCATIONAL TRAINING/ EDUCATION T34 USAGE IN BUSINESS/CORPORATE EDUCATION/TRAINING T35 USAGE IN ENTREPRENEURIAL EDUCATION/TRAINING T36 USAGE IN SELF-DIRECTED, SELF-PACED EDUCATION/TRAINING T37 ELECTRONIC INFORMATION DISTRIBUTION (inc. videotex, banking & shopping at home, databases, networking, electronic meetings, etc.) T38 xxxxxx INTERACTIVE VIDEO/code to T-5 ARTIFICIAL INTELLIGENCE T39
T-4	TELECOMMUNICATIONS	TV (inc. satellites, cable, direct broadcast) T41 TELEPHONES (include mobile phones, video phones) T42
T-5	INTERACTIVE VIDEO TECHNOLOGY	DEVELOPMENT (inc. pitfalls and advances, costs, equipment) T51 USAGE, esp. in educational settings) T52
T-6	AUTOMATION/ROBOTICS	AUTOMATION, esp. in education and office settings T61 ROBOTS T62
T-7 T-7C	BIOTECHNOLOGY/GENERAL GA. BIOTECHNOLOGY	BIOTECHNOLOGY OVERVIEWS (written for the layman) T71 DEVELOPMENT "INTERFACING" (inc. academic, business/industry, government) T72 MODEL PROJECTS (inc. UGA biotechnology effort) T73 BIOTECHNOLOGY FUTURES (anticipated breakthroughs, economic impact, etc.) T74

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UNA ENVIRONMENTAL ANALYSIS DATA BASE

FILE	FILE NAME	KEYWORDS-DESCRIPTORS	KEYWORDS-GROUPS	KEYWORDS-REGIONS
S-SOCIAL				
S-1	POPULATION SIZE/ COMPOSITION	US POPULATION GROWTH/SIZE (include projections, baby boom, baby boomlet) AGING POPULATION POPULATION AGE DISTRIBUTION BIRTH RATE/FERTILITY DEATH RATE/LONGEVITY	ELDERLY CHILDREN VETERANS BABY BOOMERS TEENAGERS	
S-2	POPULATION MIGRATION AND MOBILITY	REGIONAL MIGRATION RURAL/URBAN MOVEMENT IMMIGRATION TO US	IMMIGRANTS	
S-3	FAMILIES AND HOUSEHOLDS	HOUSEHOLD FORMATION HOUSEHOLD/FAMILY SIZE MARRIAGE DIVORCE SINGLE PARENT FAMILIES TEEN PREGNANCY CHILD WELFARE (include relative well-being of children; missing children).	MOTHERS	
S-4	DEMOGRAPHIC OVERVIEWS	DEMOGRAPHIC OVERVIEW		
S-5	CITIES	URBAN DEMOGRAPHY URBAN FUTURES		
S-6	MINORITIES	MINORITIES	BLACKS ASIANS AMERICAN INDIANS HISPANICS	
S-7	WOMEN-ROLES	WOMEN-ROLES	WOMEN	
S-8	HEALTH	HEALTH CARE DELIVERY SYSTEMS (include self-help, hospitals, alternative sites) HEALTH CARE COSTS HEALTH CARE PERSONNEL PHYSICAL HEALTH/DISEASE MENTAL HEALTH DEVELOPMENTAL DISABILITY ALCOHOL AND DRUGS INFANT MORTALITY MEDICAL TECHNOLOGY (include pharmaceuticals)		
S-9	EDUCATION	SCHOOL ENROLLMENT (include projections) PRE-SCHOOL EDUCATION ELEMENTARY SCHOOLS		

FILE	FILE NAME	KEYWORDS-DESCRIPTORS	KEYWORDS-GROUPS	KEYWORDS-REGIONS
		HIGH SCHOOLS		
		HIGHER EDUCATION		
		PUBLIC EDUCATION SUPPORT		
		TEACHING/TEACHERS		
		SCHOOL PROBLEMS (include dropout, discipline, truancy)		
		EDUCATIONAL QUALITY		
		LITERACY/ILLITERACY		
		COMPUTERS IN EDUCATION		
		EDUCATION POLICY		
		ALTERNATIVE/CONTINUING EDUCATION		
S-10	CRIME	VIOLENT CRIME (include family abuse, terrorism)		
		NONVIOLENT CRIME		
		CRIME RATES		
		PRISONS		
		YOUTH GANGS		
		CRIME DETERRENCE/PREVENTION		
S-11	VALUES AND ATTITUDES	NATIONAL PUBLIC CONCERNS (public mood, satisfaction, attitudes on major issues, confidence in institutions)		
		AMERICAN VALUE SYSTEMS (include liberalism, conservatism)		
		GENERATIONAL VALUES		
		SOCIAL TRANSFORMATION		
		SOCIAL MOVEMENTS (include peace, women's, environmental, civil rights, etc.)		
S-12	LIFESTYLES	YOUTH/TEENAGE LIFESTYLES		
		ALTERNATIVE LIFESTYLES (gays, cohabitation)		
		ALTERNATIVE FAMILY LIFESTYLES (include working couples)		
		YOUNG ADULT LIFESTYLES		
		RETIREMENT		
S-13	RELIGION	RELIGIOUS ADHERENCE (include belief levels, church attendance, spiritualism)		
		RELIGIOUS POLITICAL ACTIVISM		
		RELIGIOUS DENOMINATIONS		
		RELIGIOUS FUNDAMENTALISM		
		ALTERNATIVE RELIGIONS		
E-ECONOMIC				
E-1	US ECONOMIC GROWTH AND DECLINE	ECONOMIC GROWTH/DECLINE (including forecasts)		
		ECONOMIC CYCLES		

UXA ENVIRONMENTAL ANALYSIS DATA BASE

FILE	FILE NAME	KEYWORDS-DESCRIPTORS	KEYWORDS-GROUPS	KEYWORDS-REGIONS
		GROSS NATIONAL PRODUCT (GNP)		
		ECONOMIC/MONETARY POLICY		
		US NATIONAL DEBT		
		CAPITAL INVESTMENT IN US		
		UNDERGROUND ECONOMY		
		ECONOMIC DEVELOPMENT/REVITALIZATION		
E-2	GLOBAL ECONOMY	GLOBAL ECONOMY		
		US FOREIGN TRADE BALANCE		
		GLOBAL POPULATION		
		FOREIGN INVESTMENT IN US		
		INTERNATIONAL DEBT		
		WORLD PRODUCTIVITY		
		PROTECTIONISM IN US		
		GLOBAL REGIONAL CONFLICTS		
		INTERNATIONAL LABOR FORCE		
		GLOBAL REGIONS		
		FOREIGN TECHNOLOGY		
E-3	INDUSTRIAL DEVELOPMENT/ BUSINESS GROWTH	INDUSTRIAL GROWTH AND DECLINE		
		BUSINESS/INDUSTRIAL FUTURES		
		CORPORATE PROFITS		
		NEW BUSINESSES/ENTREPRENEURISM		
		MINORITY BUSINESSES		
		AGRICULTURAL GROWTH/DECLINE		
E-4	PRODUCTIVITY	PRODUCTIVITY		
E-5	ECONOMIC STRUCTURAL CHANGE	ECONOMIC STRUCTURAL CHANGE		
E-6	EMPLOYMENT/LABOR FORCE	LABOR FORCE COMPOSITION (include aging labor force, minorities, women)		
		LABOR FORCE SIZE		
		ECONOMIC SECTOR EMPLOYMENT		
		AFFIRMATIVE ACTION/EEO		
		FOREIGN WORKERS IN US		
		EMPLOYMENT BY FIRM SIZE		
E-7	UNEMPLOYMENT	UNEMPLOYMENT		
		JOB TRAINING/RETRAINING		
E-8	WOMEN/EMPLOYMENT AND INCOME	WOMEN IN THE LABOR FORCE (include specific job participation)		
		PAY EQUITY/PENSIONS FOR WOMEN		
		WORKING MOTHERS		
		WOMEN'S INCOME/EARNINGS		
		JOB OUTLOOK FOR WOMEN		
E-9	OCCUPATIONS	OCCUPATIONAL PARTICIPATION		
		OCCUPATIONAL OUTLOOK		
E-10	CHANGING WORKPLACE/ WORKFORCE	CHANGING/FUTURE WORLD OF WORK (include changing employee atti-		

UWA ENVIRONMENTAL ANALYSIS DATA BASE

FILE	FILE NAME	KEYWORDS-DESCRIPTORS	KEYWORDS-GROUPS	KEYWORDS-REGIONS
		tudes, baby boom workers, work ethic) ALTERNATIVE WORK SCHEDULES (include flexitime, job sharing, moonlighting, part time work) WORKER PARTICIPATION NEW MANAGEMENT STYLES (include Japanese management, corporate excellence) WORK AT HOME ALTERNATIVE WORK ARRANGEMENTS (include employee leasing, job shopping, temporary employment)		
E-11	ORGANIZED LABOR	LABOR ISSUES/CONCERNS/POLICIES (include guaranteed employment) UNION SIZE/MEMBERSHIP LABOR AGREEMENTS LABOR/MANAGEMENT RELATIONSHIPS		
E-12	PERSONAL INCOME/ EXPENDITURES	US INCOME DISTRIBUTION (include declining middle class) US INCOME LEVELS (include per capita, household, family, dual income families) US PERSONAL EXPENDITURES (include personal debt) EMPLOYMENT WAGES EMPLOYMENT BENEFITS		
E-13	INFLATION/CPI	INFLATION/CONSUMER PRICE INDEX		
E-14	POVERTY	POVERTY RATES/FORECASTS (include separate groups living under poverty) PUBLIC POLICY/RESPONSE TO POVERTY HUNGER		
E-15	PUBLIC ASSISTANCE	PUBLIC ASSISTANCE		
E-16	HOUSING/HOMELESS	HOME OWNERSHIP (include housing types - mobile homes, single family, condominiums, etc.) HOUSING COSTS AND QUALITY PUBLIC HOUSING ALTERNATIVE HOUSING HOMELESSNESS		
E-17	TRANSPORTATION	PUBLIC TRANSPORTATION		
E-18	CONSUMERISM	CONSUMERISM		
E-19	RESOURCES/	ENERGY (include supply,		

USA ENVIRONMENTAL ANALYSIS DATA BASE

FILE	FILE NAME	KEYWORDS-DESCRIPTORS	KEYWORDS-GROUPS	KEYWORDS-REGIONS
	ENVIRONMENT	consumption, conservation) WATER US INFRASTRUCTURE AGRICULTURAL/FOREST RESOURCES ENVIRONMENTAL POLLUTION (include hazardous waste disposal) WORK ENVIRONMENT		
P-POLITICAL				
P-1	WHITE HOUSE	REAGAN POLICIES/INITIATIVES		
P-2	CONGRESS	CONGRESSIONAL INITIATIVES CONGRESSIONAL REPRESENTATION		
P-3	FEDERAL COURTS	SUPREME COURT US DISTRICT COURTS		
P-4	ELECTORATE	POLITICAL PARTIES POLITICAL PARTICIPATION POLITICAL CONSERVATISM/LIBERALISM BABY BOOM POLITICAL INFLUENCE		
P-5	SINGLE INTEREST GROUPS	SINGLE INTEREST GROUPS		
P-6	GOVERNMENT REVENUES	FEDERAL TAXES STATE AND LOCAL TAXES FEDERAL TAX REFORM		
P-7	GOVERNMENT EXPENDITURES	FEDERAL EXPENDITURES/DEFICIT STATE AND LOCAL GOVERNMENT EXPENDITURES SOCIAL SECURITY FEDERAL HUMAN SERVICE EXPENDITURES		
P-8	NEW FEDERALISM	FEDERAL BLOCK GRANTS FRIVATE SECTOR INITIATIVES FEDERAL SOCIAL POLICY/NEW FEDERALISM		
P-9	GOVERNMENT REGULATION	GOVERNMENT REGULATION		
P-10	LITIGATION	LITIGATION		
T-TECHNOLOGICAL				
T-1	TECHNOLOGICAL OVERVIEWS	TECHNOLOGICAL OVERVIEWS HUMAN IMPACT OF TECHNOLOGY HIGH TECH FUTURES		
T-2	COMPUTERS	COMPUTER USAGE (include computer literacy) ELECTRONIC INFORMATION DISTRIBUTION (include videotex, banking & shopping		

UWA ENVIRONMENTAL ANALYSIS DATA BASE

FILE	FILE NAME	KEYWORDS-DESCRIPTORS	KEYWORDS-GROUPS	KEYWORDS-REGIONS
		at home, databases, networking. electronic meetings)		
		ARTIFICIAL INTELLIGENCE		
T-3	MICROELECTRONICS	MICROELECTRONICS		
T-4	TELECOMMUNICATIONS	TV (include cable, direct broadcast satellites)		
		FIBER OPTICS		
		TELEPHONES (include mobile phones, videophones)		
T-5	AUTOMATION/ ROBOTICS	ROBOTS		
		AUTOMATION		
T-6	BIOTECHNOLOGY	BIOTECHNOLOGY		
T-7	ADVANCED MATERIALS	ADVANCED MATERIALS		
T-8	RESEARCH AND DEVELOPMENT	RESEARCH AND DEVELOPMENT		
T-9	HIGH TECH WORKPLACE/ WORKFORCE	HIGH TECH WORKFORCE SIZE/COMPOSITION		
		HIGH TECH JOBS (include types, outlook)		
		HIGH TECH WORKPLACE		
		EDUCATION FOR HIGH TECH		
		HIGH TECH UNEMPLOYMENT/JOB LOSS		
PH-PHILANTHROPY				
PH-1	UNITED WAY COMPETITORS AND CRITICS	COMMITTEE FOR RESPONSIVE PHILANTHROPY		
		BLACK UNITED FUND		
		WOMEN'S FUNDS/CHALLENGES		
		ALTERNATIVE COALITION CHALLENGES		
		HEALTH AGENCY COMPETITION		
		COURT LITIGATION/RULINGS ON CHARITIES (include payroll deduction challenges)		
		PUBLIC SECTOR FUNDRAISING (include government and public schools)		
PH-2	UNITED WAY/LABOR RELATIONSHIPS	LABOR BOYCOTTS OF UW		
		UWA LABOR POLICY		
PH-3	CORPORATE PHILANTHROPY	CORPORATE CONTRIBUTIONS POLICY		
		LEVELS OF CORPORATE GIVING		
		CORPORATE SOCIAL RESPONSIBILITY		
PH-4	DONOR CHOICE	DONOR OPTION PLANS		
		DONOR DECISION-MAKING		
PH-5	LEVELS/PATTERNS OF GIVING	LEVELS/PATTERNS OF GIVING		

UWA ENVIRONMENTAL ANALYSIS DATA BASE

FILE	FILE NAME	KEYWORDS-DESCRIPTORS	KEYWORDS-GROUPS	KEYWORDS-REGIONS
PH-6	NONPROFIT SUPPLEMENTAL FUNDRAISING	NONPROFIT PROFIT-MAKING BUSINESSES NONPROFIT MAIL CAMPAIGNS		
PH-7	VOLUNTARISM	VOLUNTARISM		
PH-8	YOUTH AND VOLUNTARISM	YOUTH AND VOLUNTARISM		
PH-9	PRIVATE FOUNDATIONS	PRIVATE FOUNDATIONS		
PH-10	INTERNATIONAL PHILANTHROPY	INTERNATIONAL PHILANTHROPY		
PH-11	CHARITABLE REGULATION AND OBSTACLES	CFC REGULATIONS TAX POLICY AFFECTING NONPROFITS CHARITABLE REGISTRATION/REPORTING DONOR REGULATION NONPROFIT EXPENSE REGULATIONS		
PH-12	OVERVIEWS ON PHILANTHROPY	OVERVIEWS ON PHILANTHROPY		
R-REGIONS				
R-1	REGIONAL DEMOGRAPHICS	REGIONAL POPULATION SIZE (include projections, state population size, city populations)		NORTHEAST NEW ENGLAND MIDDLE ATLANTIC NORTH CENTRAL EAST NORTH CENTRAL
R-2	REGIONAL ECONOMICS	REGIONAL ECONOMICS (include business growth) REGIONAL EMPLOYMENT		WEST NORTH CENTRAL SOUTH SOUTH ATLANTIC EAST SOUTH CENTRAL WEST SOUTH CENTRAL WEST PACIFIC MOUNTAIN SUNBELT FROSTBELT RUSTBELT MIDWEST
FS-FORECAST SUMMARIES				
FS-1	1980S FORECAST SUMMARIES	1980 FORECAST SUMMARIES		
FS-2	1980S AND BEYOND	1980S AND BEYOND FORECAST SUMMARIES		

UWA ENVIRONMENTAL ANALYSIS DATA BASE

FILE	FILE NAME	KEYWORDS-DESCRIPTORS	KEYWORDS-GROUPS	KEYWORDS-REGIONS
	FORECAST SUMMARIES			
FS-3	JOHN NAISBITTS TREND LETTER			
FS-4	TFG (THE FUTURES GROUP) TREND REPORTS			
FS-5	THE FUTURIST			

IDENTIFY LITERATURE SOURCES AND DATA BASES

Information sources include newspapers, magazines, journals, TV and radio programs, conferences, etc. The important criterion is diversity. For example, it would be important to include major newspapers representing different parts of the country, e.g., The New York Times, The Wall Street Journal, The Miami Herald, The Chicago Tribune, The Los Angeles Times, The Chrisitian Science Monitor, and USA Today. The Chronicle of Higher Education and Education Week focus on education. There are a number of magazines/journals which provide good scanning information in a variety of areas. For example, in the social/demographic area, there are American Demographics and Public Opinion. In the technological sector, there are High Technology, Datamation, BYTE, Computer World, Discover, and Information World. In the economic sector, there are Business Week, The Economist, Fortune, Forbes, Money, Inc., and the Monthly Labor Review. In the political sectors there are New Republic, The National Review, The National Journal, and Mother Jones. Magazines and journals that spread across these sectors include Vital Speeches of the Day, Across the Board, Naisbit Trend Letter, Kiplinger Wasington Letter, Time, Newsweek, U.S. News and World Report, and The Futurist. Morrison, Renfro, and Boucher (1984) identify a number of other information resources, including those used by the ACLI Trend Analysis Program and the ERIC Clearinghouse on Higher Education.

In addition to those resources commercially available, a number of government agencies publish trend data, many times at no or little cost. For example, GAO Reports may be obtained from the U.S. General Accounting Office, Document Handling and Information Services Facility, P.O. Box 6015, Gaithersburg, MD 20877, phone 202-275-6241. NCES reports are available from NCES, Washington, D.C. Periodic Rand reports may be obtained from The Rand Corporation, Publications Department, 1700 Main Street, P.O. Box 2138, Santa Monica, CA 904062138.

ASSIGN SCANNERS INFORMATION RESOURSES

Assigning scanners specific material for regular review and analysis provides a measure of confidence that most "blips" on the radar screen will be spotted. A suggested procedure of assigning information resources is first to ascertain what materials, conferences, etc., are regularly read or attended by scanners. The list of material regularly read by scanners should be compared to the list of important information resources identified in the above activity. If at all possible, scanners should be assigned material which they already regularly review. It is likely that there will be material which is not regularly read; in such cases, it is recommended that scanners be asked to volunteer to read those resources. Moreover, the scanning committee chair should institute a procedure to "spot check" how well the information resources are being reviewed. If there are many scanners, it is advisable to build redundancy, i.e., have two scanners for the same information resource.

TRAIN SCANNERS

Scanners need orientation and training in scanning and reporting information from these materials via abstracts. That is, scanners should keep in mind that they are scanning to anticipate social, economic, technological and legislative/regulatory changes in order to facilitate planning and policy formulation. Therefore, they should seek signals that indicate departures from expected futures. Specifically, when scanning their assigned materials, they should ask themselves if the items:

1. represent events, trends, developments, or ideas never before encounted?
2. contradict previous assumptions or beliefs about what seem to be happening?
3. represent new twists to old arguments?

4. can be linked to other abstracts previously written or seen?

5. discuss new patents, inventions, and/or research results?

6. have implications for the long-range program or management of the institution?

7. contain polls or forecasts?

TRAIN ABSTRACTERS

It is ideal if scanners would also serve as abstracters. However, as noted above, it may be one or two student assistant would have to be employed for this task. Irrespective who the abstracting, however, it is recommended that all scanners and IR staff personnel be trained to write abstracts.

The lead sentence of an abstact should be a response to this question: "If I had only a few minutes to describe this article to a friend, what would I say?" What is the most important idea or event that indicates change? The response to this question should be followed by a one paragraph explanation. Whenever possible, statistical data should be included. The summary should be limited to no more that one-half page of single-spaced, typewritten copy.

Each abstract should have an implications section responding to the question, "How will the information in this article affect this institution's programs or management?" The author should include a list of those emerging issues suggested by the article, a description of future events occuring as a result of the trend indentified by the article, and/or an identification of issue stakeholders if they are not listed in the article.

Speculation about implications is a part of the scanning and abstracting process. Here the abstracter tries to determine an item's potential for affecting other facets of the social environment and/or the insititution. There are no "right" answers. Note, however, that some articles may offer no implication that are immediately apparent. The scanning committee, with the benefit of related abstracts from other

scanners, may be able to detect implications that a single monitor cannot.

CONDUCTING SCANNING COMMITTEE MEETING

A scanning committee meeing should be held every two to three months to handle the approximately 70-100 abstracts which would probably come in during that period. There are several approaches that could be used to prepare for a scanning committee meeting. For example, at the Georgia Center for Continuing Education, the chair segregates abstracts according to subject area, e.g., all those concerning office automation go into one pile, employee compensation go into another, and those difficult to assign into a miscellaneous pile. Each member of the committee is then assigned a particular packet of abstracts. All members read the entire selection of abstracts received, but are requested to come to the meeting with a list of trends and potential issues derived from those abstracts in their packet that are new. They should examine how these trends and issues relate to or conflict with other trend areas identified previously. An alternative approach is for each member to review all scanning abstracts and come to the meeting prepared to sort them into three categories: "Winners," "losers," and "middle-of-the-roaders." Irrespective as to which approach is used, the meeting itself may last from two to three hours; a round robin with each person reporting his/her subject area followed by a free-for-all discussion. The end result of this meeting should be a list and brief description of 15 or so trends, possible events, and emerging issues which appear important to consider in the annual ED QUEST exercise.

SCANNING NEWSLETTER

A scanning newsletter can serve to bring important new trends and events to the attention of all members of the institution, and, at the same time, provide recognition for the efforts of volunteer scanners. This newsletter could be a "stand alone" or could be included as an insert in one of the regularly published institutional newsletters. The newsletter,

whether stand alone or insert, should have a logo, be "jazzy," printed on colored paper, and have special boxes labled, "Wild Speculation." The important point is to avoid anointing speculations, but recognize that the purpose of the newsletters is to print items which have implications for the institution.

ISSUE BRIEFS

After reviewing absracts at the scanning committee meeting, the committe will be able to identify those 15-25 or so trends, events, and emerging issuse that are most important to monitor. It may be that greater in-depth analysis of a particular item is needed. The president may wish to commission an issue brief on the item, to be written either by a member of the ED QUEST team, an administrative staffer, a staff member in the IR office, or a faculty member. A recommended format for an issue brief is:

- What is the issue?
- What do we know about it?
- What are the implications?
- What should the organization do?

CONCLUSION

ED QUEST is a process designed to permit institutional decision makers to share their estimates of trends and events in future environmental contexts that have critical implications for the institution's polices and strategies. It is a systematic, intensive, and relatively inexpensive way to focus quickly on strategic areas for which more detailed planning and analysis would be beneficial. Through participating in the process, senior leaders develop a shared understanding of high priority issues and a view of the dynamics of the changing environment of the institution. Participating in the ED QUEST process facilitates team building, focuses attention of decision makers upon the longer-term future, and assures that

the stategic options developed from the process have the authority from top management.

In order to provided a continuous, objective, complete, and detailed analysis of the external environment, the institution should develop a systematic environmental scanning and forecasting system. If important information about the external envirnoment does not exist in the ED QUEST team, or is not given an opportunity to be articulated, it will not be included in ED QUEST deliberations. Consequently, the results of the ED QUEST process will suffer. However, with an on-going environmental scanning system, the quality of the information that goes into the ED QUEST Futures Prospects Notebook will be greatly improve, thereby enhancing the quality of the analysis of the ED QUEST team. As importantly, since members of the ED QUEST team should be involved as scanners and as members of the scanning committee on a continuous basis, they will increase their orientation to the future as well as become more proficient participants in the yearly ED QUEST planning exercise. Incorporating ED QUEST and a systematic environmental scanning system in the long range planning activities of the institution should enable institutional decision makers to anticipate what is happening in the state, region, nation, and world that will affect the nature and quality of the institution and its educational programs and, thereby, plan more effectively.

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Appendix A: Future Prospects Notebook

PROSPECTS FOR THE FUTURE

Some Possible Trends Which
May Impact Technical Education

INTRODUCTION

This book is intended to stimulate you to think about the future. The information included in it is intended to stimulate each member of the planning team to identify possible trends and events that may impact the future direction of Utopia County Community College.

The articles, charts, graphs and lists included in the book are only meant to suggest some possible trends and events. Certainly there is other information not included that may suggest other trends and future events important to the future of the college. Each Ed QUEST team member is encouraged to include these other trends and events in their assessment of changes in the college's environment.

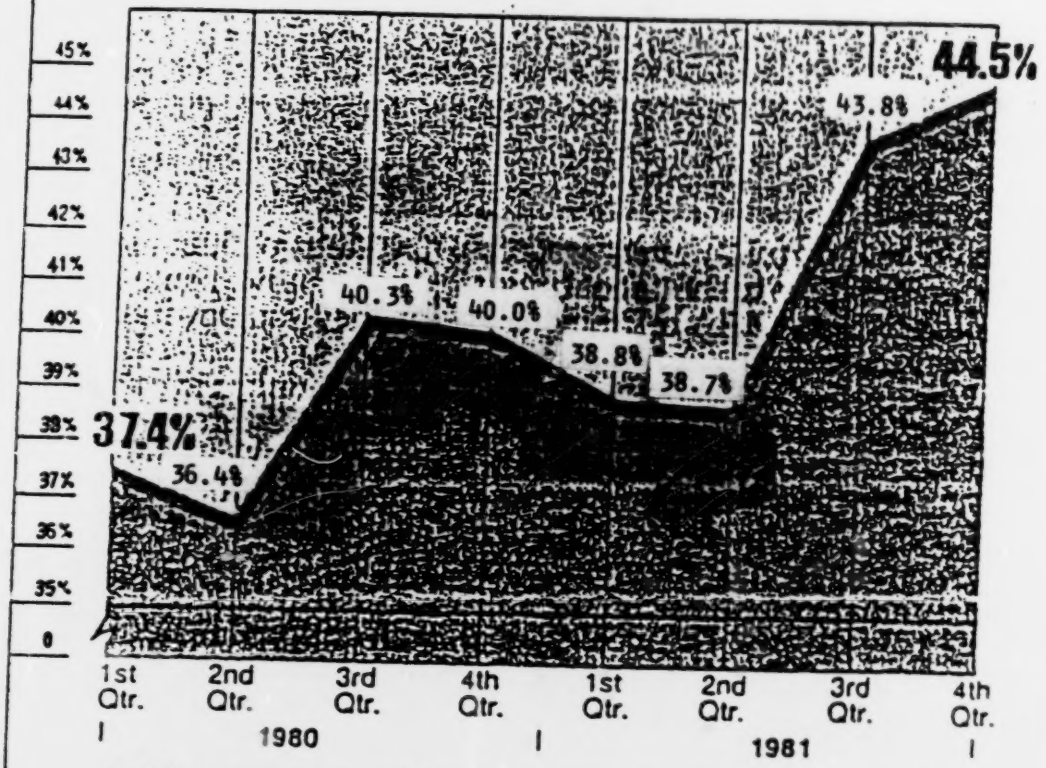
PREPARING YOUTH FOR THE FUTURE

1. ENDING COMPULSORY SCHOOLING AT AGE 16.
2. CHANGING THE BASIC STRUCTURE OF HIGH SCHOOLS BY MAKING THEM SMALLER OR CREATING MORE DIVERSITY WITHIN THEM.
3. ASSIGNING TO COMMUNITY COLLEGES A GREATER RESPONSIBILITY FOR AMERICAN YOUTH.
4. RETAINING VOLUNTARY MILITARY SERVICE.
5. CREATING A NATIONAL YOUTH SERVICE FOUNDATION, INCORPORATING THE ACTION AGENCY.
6. ESTABLISHING A NATIONAL EDUCATION FUND (NEF).
7. INCREASING FEDERAL FUNDING OF SECONDARY SCHOOL IMPROVEMENTS BY $500,000,000.
8. ESTABLISHING A FEDERAL-STATE WORK/STUDY PROGRAM FOR SECONDARY YOUTHS.
9. PROVIDING FEDERAL INCENTIVES FOR MOVING SKILLS TRAINING OUT OF THE HIGH SCHOOL CLASSROOM AND INTO THE WORK PLACE OR COMMUNITY COLLEGES.
10. STRENGTHENING A VARIETY OF EXISTING PROGRAMS FOR YOUTHS.
11. APPROPRIATING $500,000,000 ADDITIONAL IN SPECIAL PROGRAMS FOR YOUTH THROUGH THE DEPARTMENT OF LABOR.

RECOMMENDATIONS FROM GIVING YOUTH A BETTER CHANCE: OPTIONS FOR EDUCATION, WORK, AND SERVICE BY: THE CARNEGIE COUNCIL ON POLICY STUDIES IN HIGHER EDUCATION

Almost 1 of 2 Out of Work

Black Teen-Age Unemployment (ages 16-19)



Jobless rate for black youths is more than twice that of white teen-agers, and almost five times the rate for all workers.

USN&WR chart—Basic data: U.S. Dept. of Labor

U.S.NEWS & WORLD REPORT, Jan. 18, 1982

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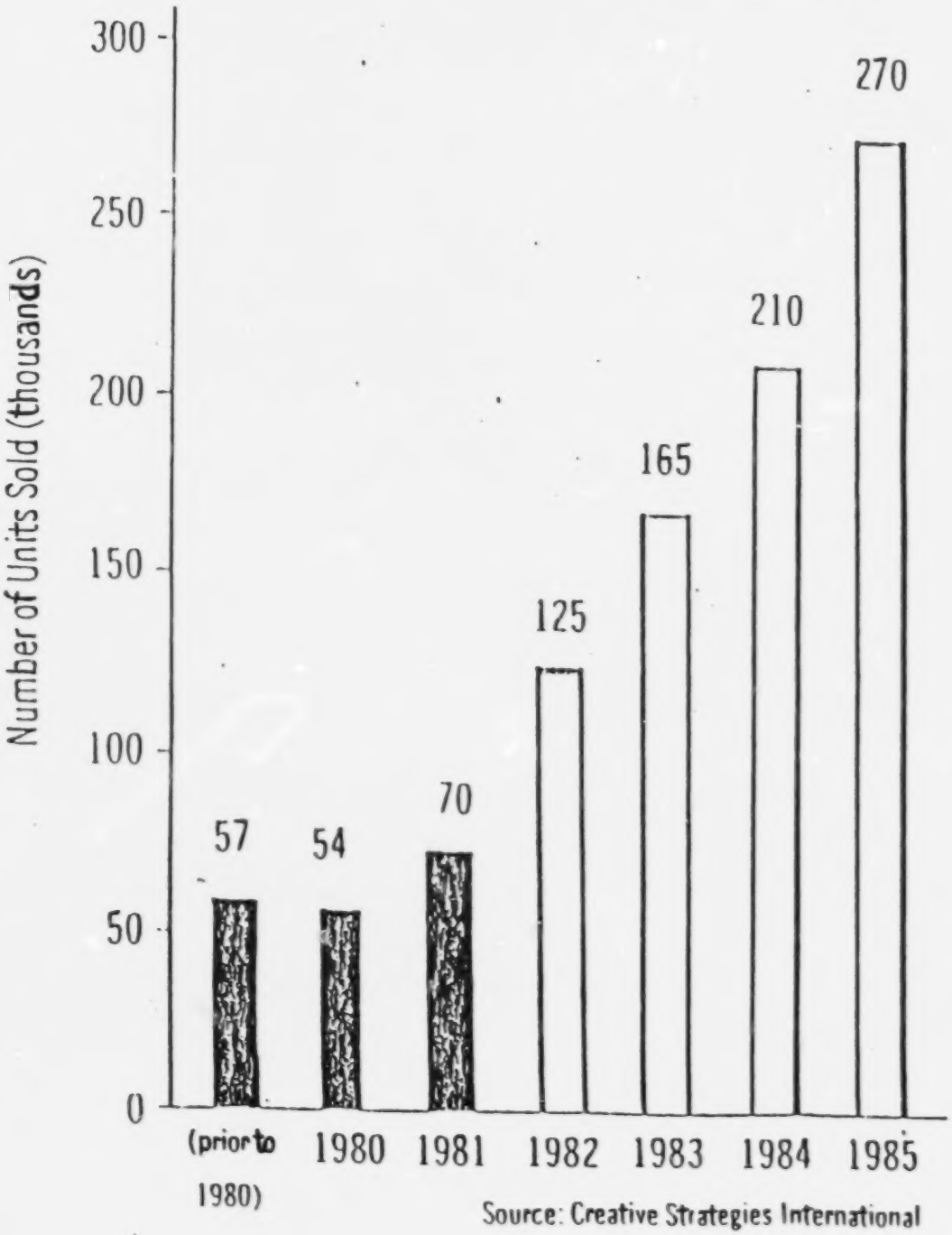
THE FUTURE OF ROBOTS

ROBOT SALES (U.S. MANUFACTURERS)

YEAR	UNITS SHIPPED	VALUE (MIL)	NUMBER IN USE
1982	6,300	$ 315	11,300
1984	15,950	$ 638	37,250
1987	34,950	$ 874	115,200
1990	125,400	$2,132	359,200
1992	274,000	$4,110	810,000

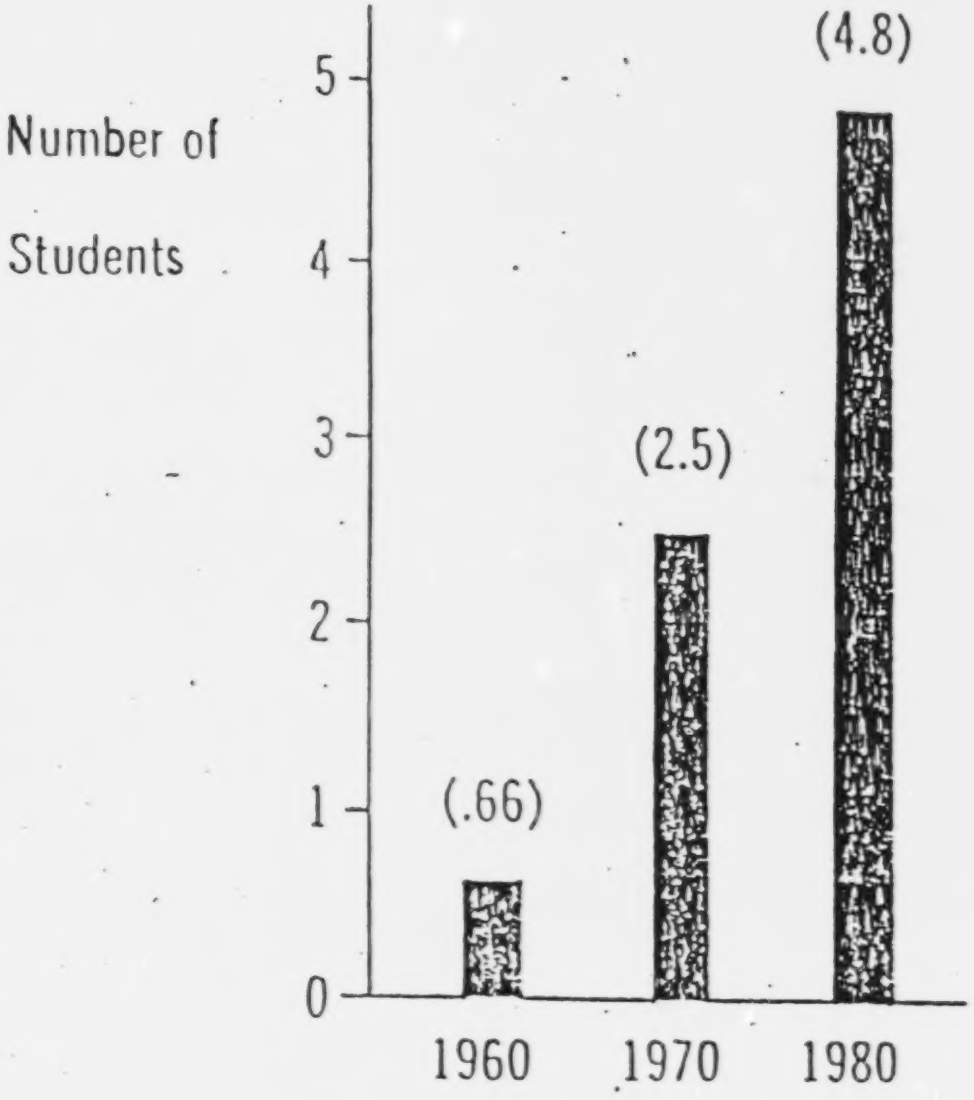
SOURCE: INTERNATIONAL RESOURCE DEVELOPMENT, INC.

The use of microcomputers is spreading in education....



Students Enrolled In Credit Courses In Two–Year Colleges

(in Millions)



Source: A. A. C. J. C.

Worker Shortage Foreseen By 1990

United Press International

CHICAGO — A manpower expert predicted Saturday the declining birth rate will produce a worker shortage by 1990, relegating unemployment and discrimination against women and minorities to the problems of history.

Mary Coeli Meyer, a consultant on human resource and manpower systems, said in an interview the pool of Americans available to work will be drastically reduced, which will force industry to bring in "guest workers" to do menial jobs.

Actions taken by the various Washington administrations will have little or no bearing on the situation, she said.

"The decline in the birth rate — there is going to be a shortage of people," she said. "You're going to have a one-for-two replacement factor by 1990."

The currently nearly 10 percent unemployment rate is just a temporary phenomenon, she said.

"I'm not worried about the unemployed at the moment," she said. "I feel for them but it's just temporary.

"They're divided into three categories: You've got the unemployed due to the economic state we're in; you've got the dropouts — they looked for a job and couldn't find one so they dropped out; and you've got the hardcore unemployed, which is a different category entirely.

"When you talk about the labor shortage, you're not talking about those unemployed because of the economy. They will be sucked up quickly," she said, adding those who will have to be drawn into the system belong to the other two groups.

"One of the problems we've got now is poor manpower planning. We load up now, produce all we can and when we overproduce we wind up in a recession because we never plan a balanced system where input equals output. It's very shortsighted."

Ms. Meyer, president of the consulting firm Cheshire Ltd., said the labor shortage will force industry to practice long-term planning and retrain workers who have been displaced by technology and other problems.

"Technology has gone as far as it can go without considering the human factor," she said. "You can only mechanize and computerize things to a given point without considering the human being before putting the human back into the equation to get the product out."

The labor shortage, however, is going to force a return to creativity and planning and the competition for manpower is going to increase the individual's level of job satisfaction because industry is going to be forced to cater to its workers, she said.

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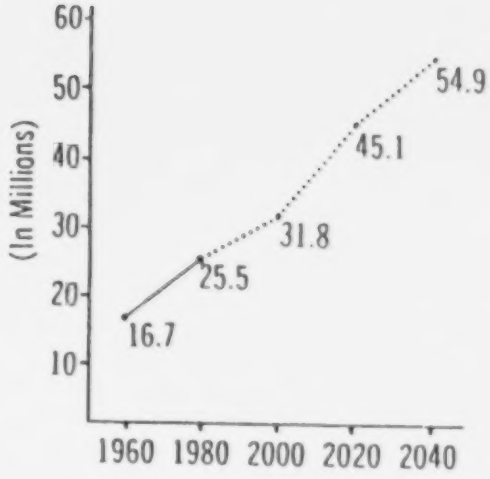
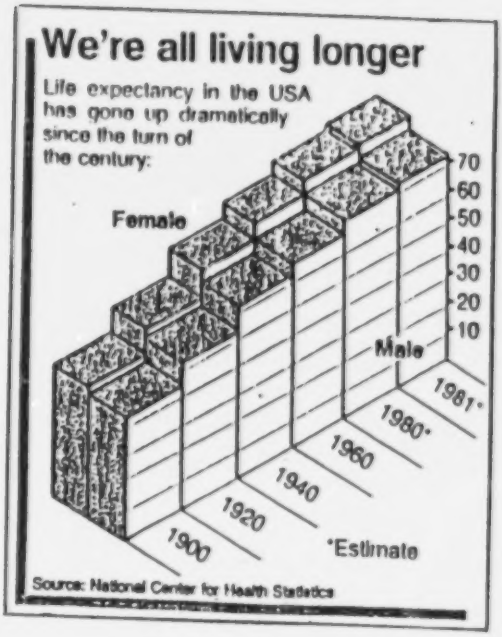
Americans Age 65 or Older



Source: U. S. Department of Commerce

We're all living longer

Life expectancy in the USA has gone up dramatically since the turn of the century:



Source: National Center for Health Statistics

Living to be 100

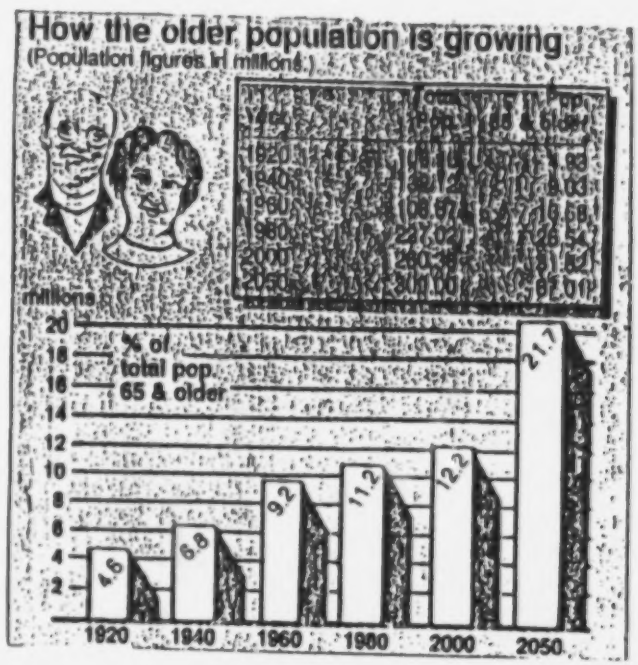
The number of people living 100 years or more has grown steadily in recent years. Here's a look at the trend:

Year	100 or older
1971	5,300
1972	6,615
1973	7,430
1974	8,300
1975	9,470
1976	10,700
1977	11,470
1978	11,920
1979	14,320
1980	15,260

Source: Social Security Administration

How the older population is growing

(Population figures in millions.)



11-22-82

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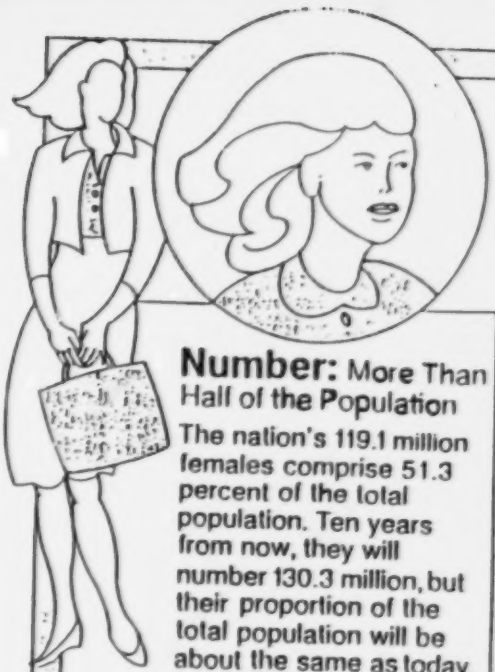
HOME VIDEO PROJECTIONS
U.S.A., 1980 - 1990

	1981	1985	1990	PROJECTION 2000
HOMES USING TELEVISION (IN MILLIONS)	80.6	85.4	93.9	IN EXCESS OF 100
CABLE TV HOUSEHOLDS (IN MILLIONS)	10	28	46	55
PERCENTAGE OF ALL TELEVISION HOUSEHOLDS USING CABLE	29.8%	32.8%	49%	55%
HOMES WITH PAY-TV (INCLUDING PAY-CABLE AND SUBSCRIPTION TV) (IN MILLIONS)	10	16.5	30	42
PERCENTAGE OF ALL TELEVISION HOUSEHOLDS USING PAY-TV	12.4%	23.4%	37.8%	42%
VIDEOCASSETTE RECORDERS IN HOMES (IN MILLIONS)	2.1	6	13	20
VIDEODISC PLAYERS IN HOMES (IN MILLIONS) (125,000)	0.125	3.5	7.5	18

SOURCE: 1981 FIGURES, MOTION PICTURE ASSOCIATION OF AMERICA



Women in the U.S.— A New Look

Number: More Than Half of the Population

The nation's 119.1 million females comprise 51.3 percent of the total population. Ten years from now, they will number 130.3 million, but their proportion of the total population will be about the same as today. Now, there are 88.4 million women age 18 and up.

Race: 6 of 7 Are White

Of all females—

101.6 million, or 85 percent, are whites.

14.6 million, or 12 percent, are blacks.

2.9 million are of other races.

Age: Older Than Men on the Average

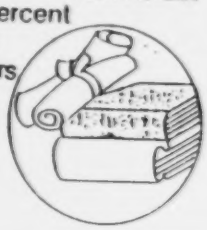
The median age of females is 31.9 years, compared with 29.3 years for males. And females are getting older: In 10 years, their median age will be 34.5 years, and by the year 2000, 36.8 years.

Life span: Women Live Longer Than Men

The average female lives to a little more than 78 years, or nearly eight years longer than the average male. The gap in life expectancy is widening—it was little more than seven years two decades ago.

Education: More Likely to Attend College

Among persons age 18 to 24, 35 percent of women are enrolled in college, compared with 34 percent of men. At last count, 23.4 percent of graduating medical doctors were women, as were 30.2 percent of lawyers.



Marriage: More Women Are Putting It Off

Just over half of the women age 20-24 have never been married, compared with 35.8 percent in 1970 and 28.4 percent in 1960. But 83 percent of women ultimately do marry.

Families: Those Headed by Women Rise Sharply

More than 1 in 7 families—9.1 million—are headed by women. The number has risen by 65 percent since 1970, largely because of the climbing divorce rate.

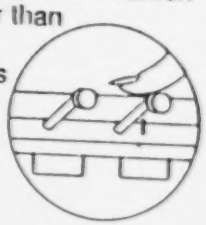
PICTOGRAM

Children: Women Want Fewer Offspring

Of childless married women age 18-24, 23 percent expect to have one child or none, while 72 percent expect to bear two or three children. Only 5 percent expect four or more. If fulfilled, these plans mean little population growth.

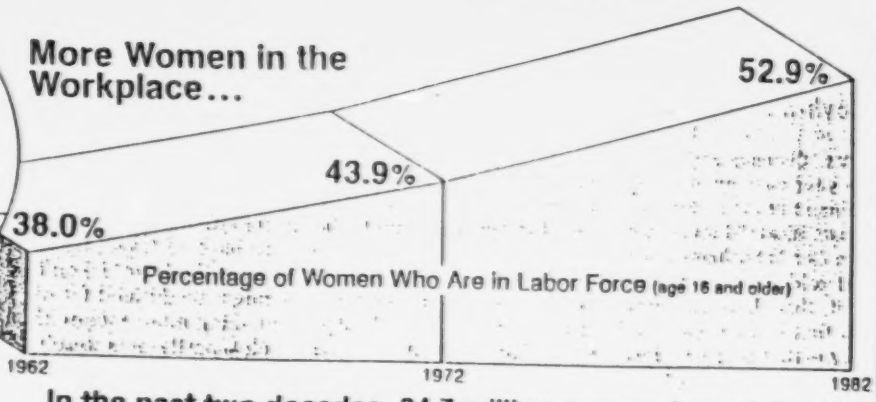
Political power: An Edge in Numbers at the Polls

Women of voting age are 52.2 percent of all Americans age 18 and up. With women living longer than men, the proportion is growing.



How Their Lives Are Changing

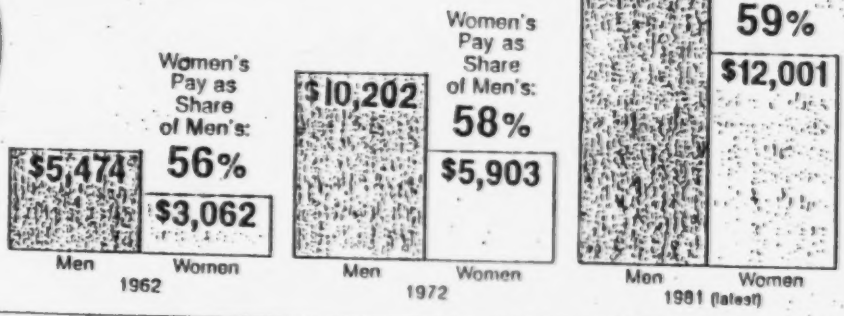
More Women in the Workplace...



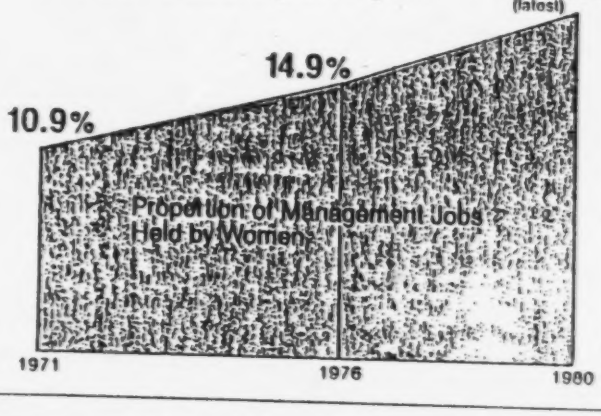
In the past two decades, 24.7 million women have joined the labor force, compared with 13 million men.

...At a Pay Disadvantage

Median Earnings of Full-Time Wage and Salary Workers



Better Jobs Open Up...



...Though the "Female Ghetto" Survives

Women as proportion of all persons employed as—

Secretaries, typists	98.3%	Cashiers	86.2%
Receptionists	97.3%	Librarians, archivists, curators	82.8%
Bank tellers	93.5%	Health technicians	72.3%
Telephone operators	92.9%	Salesclerks	71.2%
Nurses, dietitians, therapists	92.6%	Teachers (noncollege)	70.6%
Bookkeepers	91.1%		

USN&WR charts by Richard Gage—Basic data: U.S. Depts. of Commerce and Labor, Equal Employment Opportunity Commission

U.S NEWS & WORLD REPORT, Nov. 29, 1982

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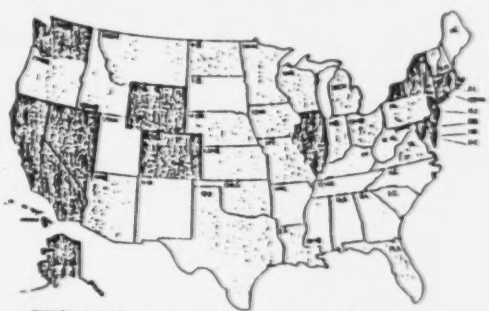
People's Incomes: How Your State Ranks

For the first time in three years, personal income in 1981 outpaced the rate of inflation.

New figures from the Commerce Department show personal income averaging $10,491 per person, up 10.7 percent over the 1980 average of $9,480. Consumer prices in 1981 increased 10.4 percent.

Personal income was highest in the Far West. Biggest gains occurred in the Plains. A state-by-state look—

	Per Capita Income In 1981	Gain Over 1980
Alaska	$13,763	+ 8.9%
District of Columbia	$13,539	+ 10.9%
Connecticut	$12,816	+ 11.1%
New Jersey	$12,127	+ 11.2%
California	$11,923	+ 9.4%
Wyoming	$11,665	+ 7.4%
Illinois	$11,576	+ 10.9%
Nevada	$11,576	+ 7.7%
Maryland	$11,477	+ 10.4%
New York	$11,466	+ 11.8%
Washington	$11,277	+ 9.7%
Colorado	$11,215	+ 11.8%
Massachusetts	$11,128	+ 10.8%
Delaware	$11,095	+ 10.1%
Hawaii	$11,036	+ 8.2%
Kansas	$10,813	+ 9.4%
Michigan	$10,790	+ 9.3%
Minnesota	$10,768	+ 11.2%
Texas	$10,729	+ 12.3%
U.S. average	**$10,491**	**+ 10.7%**
Iowa	$10,474	+ 13.1%
Pennsylvania	$10,370	+ 10.5%
Nebraska	$10,366	+ 15.9%
Virginia	$10,349	+ 10.3%
Ohio	$10,313	+ 9.3%
Oklahoma	$10,247	+ 12.5%
North Dakota	$10,213	+ 23.4%
Florida	$10,165	+ 11.1%
Rhode Island	$10,153	+ 10.5%
Wisconsin	$10,035	+ 7.8%
Oregon	$10,008	+ 8.0%
New Hampshire	$ 9,994	+ 10.6%
Arizona	$ 9,754	+ 10.6%
Indiana	$ 9,720	+ 9.7%
Missouri	$ 9,651	+ 11.0%
Louisiana	$ 9,518	+ 12.1%
Montana	$ 9,410	+ 11.8%
Idaho	$ 8,937	+ 10.2%
Georgia	$ 8,934	+ 11.0%
South Dakota	$ 8,833	+ 14.5%
Vermont	$ 8,723	+ 12.1%
North Carolina	$ 8,649	+ 11.2%
Maine	$ 8,535	+ 11.3%
New Mexico	$ 8,529	+ 8.1%
Tennessee	$ 8,447	+ 11.0%
Kentucky	$ 8,420	+ 11.5%
West Virginia	$ 8,377	+ 8.9%
Utah	$ 8,313	+ 8.5%
Alabama	$ 8,219	+ 10.1%
Arkansas	$ 8,044	+ 13.0%
South Carolina	$ 8,039	+ 10.6%
Mississippi	$ 7,408	+ 11.4%



High-income states—more than $11,000
Near-average-income states—$9,000 to $11,000
Low-income states—less than $9,000

USN&WR—Basic data: U.S. Dept. of Commerce

USN & WR 9-27-82

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Midwest gets good grades for high-tech

By Kevin Anderson
USA TODAY

When it comes to luring high-technology companies, it's possible to go to the head of the class with nothing but C's on your region's report card, provided there are no F's.

That's the conclusion of a U.S. Congress study calling the recession-ravaged Midwest the most attractive region overall for high-tech industrial growth.

The Joint Economic Committee asked 691 high-technology companies what they looked for when shopping for a plant site. The companies ranked 12 attributes according to importance and then graded seven regions on each attribute.

The Midwest — Ohio, Michigan, Indiana, Illinois, Wisconsin and Minnesota — was ranked no better than fourth on any attribute. But unlike all other regions, it had no low marks on any important item, causing the study to envision "the Midwest leading the way" in high-tech industrial growth through 1986.

New England and the Far West "may have reached their holding capacity" for high-tech companies, the study says. Because those regions got low marks from expansion-minded companies for labor availability, taxes, congestion, housing costs and plant-site availability, "They will not maintain their [high-tech growth] positions."

Most high-tech companies do not need to be near their customers, massive energy supplies, sources of raw materials or transportation, the report says. Their overriding concern is to find nests of skilled technicians and well-trained professionals looking for work — nests most often found near top universities.

Poor marks for universities hurt the Southeast's rating; comparatively good ones bolstered the Midwest's score.

Brookings Institution economist David Breneman explains the study results this way: While the Midwest's source of wealth — its factories and railroads — flourished in the first half of this century, the enriched states "invested some of that wealth into building great universities." Now, with the industrial base eroding, that investment could pay off.

Still, the Southeast, with high marks in four of the top five attributes, should do well in the high-tech race, the study says.

The 691 companies surveyed operate 1,831 plants and plan to build 1,329 more by 1986. By then, the Southeast's share of that pie should grow about 17 percent, from 7.2 percent to 8.4 percent; the Midwest's share should grow about 33 percent, from 7.2 percent to 9.6 percent, the study says.

While high-tech growth will slow in the Far West and New England, those regions will remain high-tech centers. By 1986, the Far West's share of the surveyed companies' plants will drop about 10 percent, from 24.1 percent to 21.6 percent; New England's should drop 3 percent, from 16.8 percent to 16.3 percent.

High tech and the regions

Six hundred ninety-one high-technology companies ranked 12 attributes for importance* in determining where the firms locate and then ranked seven regions based on their strength in each attribute.

Attribute	Percent of Importance	New Eng.	Far West	Mid-East	South-east	South-west	Mt. & Plain	Mid-west
Labor costs, availability	89.3	5	7	6	1	2	3	4
Labor productivity	72.2	6	4	7	3	2	1	4
Tax climate	67.2	7	5	6	1	2	3	4
Academic institutions	58.7	1	2	3	6	5	7	4
Cost of living	58.5	6	7	5	1	2	3	4
Transportation	58.4	2	3	1	6	5	7	4
Access to markets	58.1	2	1	3	6	5	7	4
Regional regulatory practices	49.0	7	5	6	1	2	3	4
Energy costs, availability	41.4	7	4	6	1	2	3	5
Cultural amenities	36.8	1	2	3	7	5	6	4
Climate	35.8	5	1	6	3	2	4	7
Access to raw materials	27.5	3	1	2	6	5	7	4

* Companies ranked each attribute "very significant, significant, somewhat significant or no significance." Number in column is sum of very significant and significant percentages.
Source: Joint Economic Committee, U.S. Congress

USA TODAY

11/23/82

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THE CHRONICLE OF HIGHER EDUCATION

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July 27, 198

Bell & Howell Schools Seek Academic Acceptance

Career-oriented proprietary institutes enjoy new surge of popularity

By Robert L. Jacobson

WASHINGTON

Buoyed by a new wave of popularity for "career-oriented" technical education, the Bell & Howell Education Group, one the largest proprietary organizations of its kind, is pressing for greater acceptance of its post-high-school programs by the academic community.

Last fall the organization's seven technological institutes became candidates for regional accreditation by the North Central Association of Colleges and Schools, and now, with the help of a major public-relations company, they are openly soliciting national press coverage in an attempt to reach beyond their immediate circle of private trade and technical schools and into the mainstream of higher education.

Ironically, their efforts come at a time when many traditional colleges and universities, though perhaps better known and more widely respected, are having trouble maintaining their enrollments and assuring their students of adequate job opportunities after graduation.

But for the 14-year-old Bell & Howell Education Group, a wholly owned subsidiary of Bell & Howell Company, the Illinois-based manufacturer of learning systems and business equipment, these are good times.

The institutes' oldest and largest courses of study are in electronic-engineering technology, in which they offer technician diplomas as well as associate and bachelor's degrees. Since 1979 they have been offering degree programs in computer science for business.

The demand for such courses is growing faster than anyone expected.

"We're very proud of what we do and we'd like our story told," said Kingsley G. Bewley, president of the education group, in a recent interview here.

Nancy R. Divis, whom Bell & Howell hired as its first resident public-relations manager less than two years ago, said the organization used to limit its publicity efforts to prospective students and their families, but that today it also wanted recognition from educators who could help create a "favorable atmosphere" for its promotional material."

Rising Enrollments

The two officials pointed to a series of facts and figures to support their view that the Bell & Howell institutes—among other proprietary technical schools—increasingly are becoming a force to be reckoned with in higher education:

► Enrollments are booming. Despite tuition of more than $1,100 per trimester, the total number of students has nearly doubled in the past three years, to about 19,000.

► Entering students are more qualified than ever, particularly those enrolling in the institutes' degree-granting electronics programs. Last year, Mr. Bewley said, about 70 per cent of such students had high-school averages of B or better, compared with 58 per cent five years ago. In addition, nearly a third of the latest group of entering students had already been to two- or four-year colleges before coming to Bell & Howell.

► Job placement is exceptionally strong, with more than 97 per cent of the institutes' day-school graduates who request help being hired within 60 days. Starting annual salaries are high, too, having averaged nearly $20,000 for last winter's bachelor's-degree graduates, about $16,000 for associate-degree graduates, and about $14,700 for new technicians.

Mr. Bewley said the institutes' placement record was good because it had to be: Their recruiting materials emphasized it and their success depended on it.

Accordingly, he explained, the Bell & Howell Education Group devotes a lot of time and energy to "interfacing" with industry representatives, not only to keep tabs on the job market but also to make certain that the institutes' curricula are kept up to date.

He added that faculty members, whose average salaries range from $25,000 to $35,000 a year to be competitive with industrial pay, were regularly enrolled in seminars to help them stay current in their fields. They also are encouraged to take "industrial sabbaticals" and to continue their formal education, he said.

Instruction 'Individualized'

Most of the institutes' 300 faculty members have academic degrees and at least two years of related industrial experience, Mr. Bewley said.

But while staying current and helping students find jobs are priorities at the Bell & Howell institutes, the success of their quest for greater respect from the academic establishment may rest more on their "individualized" approach to instruction.

That is the view, at least, of Alexander W. Astin, president of the Higher Education Research Institute in Los Angeles and one of three academic representatives on the Bell & Howell institutes' seven-member advisory board:

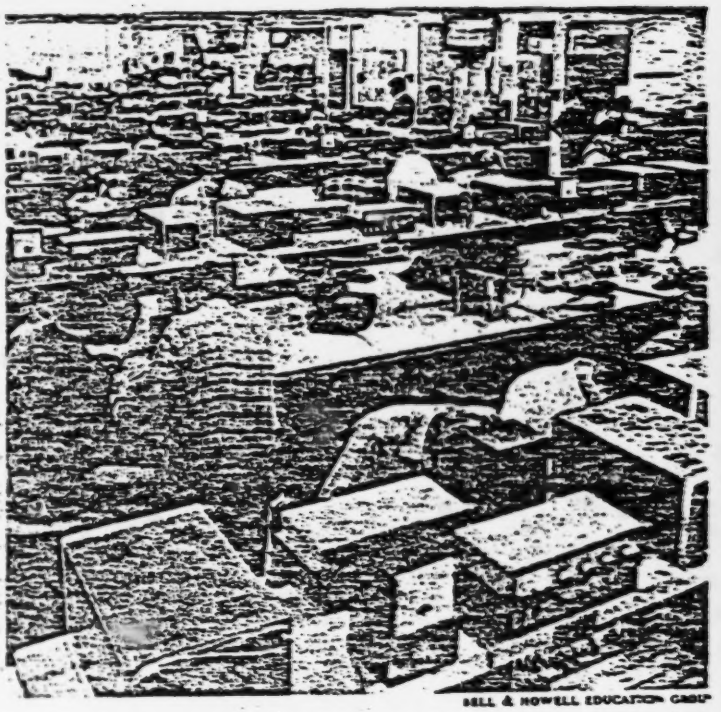
Bell & Howell's attention to students' individuals needs is "tremendous," Mr. Astin said.

"If students are having any kind of difficulty, there are people ready to intervene. This outfit is more sophisticated about education in some ways than more traditional institutions are."

Moreover, the researcher said, "they go slow, they're always focused on quality, and they're fundamentally accountable. They've recognized that one of the best ways to make a profit is to have a strong academic program."

Although Bell & Howell's surging enrollment is by no means unusual among proprietary schools these days, its push toward the mainstream of higher education apparently is, according to W. A. Goddard, executive director of the National Association of Trade and Technical Schools.

"Some of our administrators would wonder why they're seeking out the academic circles," he said of the Bell & Howell group, but then he added, "I suppose they're doing it for their students."



BELL & HOWELL EDUCATION GROUP

Students are flocking to technical programs at institutions like Bell & Howell's DeVry Institute of Technology in Chicago

Student Leaders Foresee New Political Activism

By KAREN WINKLER

WICHITA, KAN.

Discussions of how students could become more involved and more effective in state and national politics dominated the annual meeting of the United States Student Association here.

"Everyone is talking about the races in their districts," Janice Fine, national chairman of the association, said in an interview.

"Two or three years ago, students were gun-shy, scared of the electoral process," Ms. Fine said. "But I think they have finally woken up, in large numbers, from a mass lethargy—a hiatus from political activism.

"The focus on politics at this meeting has definitely been new."

Indeed, the focus on organized political activism is new for the association itself. According to some of the students here, the U.S.S.A. has in the past been less political than its rival, the American Student Association.

"We've always paid lip service to politics, but we've never been organized about it," said Joe Sweeney, a past officer of the U.S.S.A. and now secretary-treasurer of the newly formed National Student Political Action Committee.

He said the committee, which was set up last month to organize students' involvement in politics, was created mainly by members of the U.S.S.A. and of the youth caucus of Americans for Democratic Action, although it represents other student groups as well.

Most of the speakers here said students were becoming more active in politics because they feel threatened by the cuts in student aid and other programs for higher education proposed by the Reagan Administration.

"Students have always been hard to organize, but they are under attack now—and that is bringing them together," said George D. Roberts, the Midwest field coordinator for the National Education Association.

'Self-Interest Is at Stake'

"Students have realized they can no longer afford to ignore electoral politics. Their self-interest is at stake, and so they're getting into politics," Ms. Fine said.

"Student aid is going to be one of the key issues in the 1982 elections," according to Mr. Sweeney.

Mr. Roberts of the N.E.A. said that for the first time students could have a real influence on Congressional elections. "Prior to the 18-year-old vote in 1972, student voters were mostly graduate students, and sometimes seniors," he said. "They resembled the faculty in the way they voted—and they usually voted at their home address. There wasn't a concept of block voting in the university community."

'Going to Take Some Time'

Then, when 18-year-olds did get the vote, he said, "people said it was a failure. They expected George McGovern to sweep to victory on the tails of a student vote. And he didn't. But first-time voters never turn out in large numbers, and the realists said it was going to take some time."

During the last decade, students have been organizing at the local level, working in their campus communities for candidates for city council, mayor, and sometimes for state office. "Most of the time, they have been bluffing when they have lobbied for higher education and invoked the specter of reprisal with a large, unified student vote," Mr. Roberts said.

"Now we're coming of age. Students can exercise clout with that kind of unified vote in the 1982 elections."

To make their power felt, the students here said they would concentrate on races that are close.

The National Student Political Action Committee has targeted several "guaranteed student losers" who, its members say, have voted against student aid in Congress.

"Those people also come from marginal districts where a few thousand votes can make a difference," Mr. Sweeney said. "We're going to make sure those thousand votes are student votes."

The national committee will focus on Congressional races because, Mr. Sweeney said, "for the past two years Congress has abandoned students on student aid. Ronald Reagan should not be the issue—it should be Congress, and we're going to keep the heat on Congress."

Some of the students here said they were interested in forming political-action committees on their campuses to work for state and national candidates. The committees, they said, would be "people PAC's," not "money PAC's," and would concentrate on publicizing the issues rather than on raising money.

But, Ms. Fine cautioned, "a lot of work you'll be doing doesn't need a PAC. People are going to be watching you, and if you make a lot of noise about a PAC but don't really get it going, you're going to make students look very bad."

Chronicle of Higher Education
August 11, 1982

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'Creative' tuition payments

By John McGowan
and Mark Mayfield
USA TODAY

Colleges across the USA are allowing students to pay tuition with the same kind of "creative financing" their parents are using to buy homes.

And in some cases states are getting into the act.

Pennsylvania Gov. Dick Thornburgh Wednesday authorized the Higher Education Assistance Agency to sell up to $300 million in bonds annually to help finance student loans.

■ In Connecticut, Yale University allows tuition payments over 30 years.

■ In New Hampshire, Dartmouth College is selling tax-exempt bonds to fund a low interest student loan program.

■ President Reagan's alma mater, Illinois' Eureka College, raised $28,000 from alumni by an "adopt-a-student" appeal.

■ The University of Idaho is among a number of schools offering discounts to students who pay tuition up front.

■ Washington University in St. Louis and George Washington University in Washington, D.C., allow students to pay all four years' tuition in advance, insulation from rising rates.

The schools are trying to fill gaps left by federal financial aid cuts. Funding for the federal Guaranteed Student Loan program fell from $7.8 billion in 1981 to $6.1 billion this year.

"Unless colleges do more creative things ... they're going to have trouble," says Tom Ayres of Taylor University in Upland, Ind. It offers free tuition to children of laid-off workers.

12/21/82

College admission stiffens

By Cheryl Mattox Berry
USA TODAY

Tougher admission requirements in 13 states will force high school students to buckle down in science and math if they want to enroll in state universities.

A survey of the 50 states conducted by the National Association of Secondary School Principals found that the governing boards of state universities are shifting away from the "open door" college admission policies of the 1960s and '70s in favor of admitting students who have had heavy doses of math, social sciences and English.

In addition to the 13 states that have announced new standards, boards in 15 other states are reviewing their standards.

"New requirements will place a burden on schools in the area where we are already facing a teacher shortage," Lew Armistead, spokesman for the principals' group, said Tuesday.

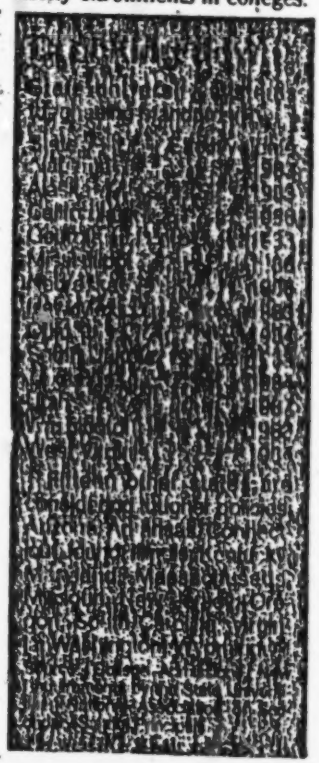
The new standards are in response to freshmen unprepared for typical workloads.

For admission to the University of California schools in the fall of 1986, a student must have three years of math instead of two; two years of social science rather than one; and four years of advanced math, science or language, not one.

"We will be sending a messge out ... that in order to come to the university, a lot of academic course work must be done," said Carla Ferri, principle administrative analyst at the University of California.

Ferri said the new requirements will save the school money since it won't have to provide remedial courses.

Critics of the tighter standards, some of which take effect in 1983, say school districts may be unable to beef up science and math departments. Innercity schools may suffer most, resulting in declining minority enrollments in colleges.



11/24/82

Last free colleges doomed?

California deficit may mean fees at 2-year schools

Special for USA TODAY

SACRAMENTO, Calif. — The nation's last free college system may soon disappear.

Without new taxes, it is "entirely probable" that California's junior college system will charge tuition next year. College programs may also have to be cut, Charlie Klein, spokesman for the community college board of governors, said Wednesday.

State lawmakers, grappling with a $1 billion deficit, ordered the state's 106 two-year colleges to set up contingency plans for charging tuition.

The statewide junior college board is considering flat fees for all students ranging from $20 to $54 a year; or, tuitions of $80 a year for full-time and $48 a year for part-time students.

Delegations from about 20 community colleges plan to attend Friday's board of governors meeting to protest tuition.

The schools now enroll 1.5 million full- and part-time students. A $20 a year student fee would bring in $28.1 million with the current enrollment. But officials estimated that $16 million of that would have to go for increased financial aid and for replacing state money that would decrease with falling enrollments.

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PROJECTED COMPUTER MILESTONES: 1990 - 2010

MILESTONE

1990 - FIRST JOSEPHSON JUNCTION COMPUTER ON-LINE; 1,000 TIMES FASTER THAN PREVIOUS COMPUTER DEVICES

1992 - NATIONAL COMPUTER MERCANTILE NETWORK ESTABLISHED

1993 - TWO COMPUTERS CONNECTED TO THE SAME MEMORY DEFEAT WORLD CHESS CHAMPION

1994 - FIRST WRISTWATCH COMPUTER WITH A CAPACITY LARGER THAN 64K; DEVICE WILL ACCEPT AND IMPART INFORMATION THROUGH VOCAL INSTRUCTIONS IN ENGLISH

2005 - FIRST BIOCHIP "INTERFACE" LINKING THE BRAIN OF A HUMAN WITH A COMPUTER MEMORY; TWO SYSTEMS CAN "TALK" TO ONE ANOTHER

2006 - GLOBAL ECONOMIC NETWORK ESTABLISHED THROUGH A HIGH-DENSITY ULTRA HIGH SPEED INTELLIGENT COMPUTER SYSTEM; GRANTS INTERNATIONAL CREDIT LOANS; MONITORS ALL WORLD TRADE MARKETS; PRODUCES INFORMATION TO PRODUCE NATIONAL AND WORLD BUDGETS

2007 - COMPUTER RIGHTS PACT SETTING FORTH RIGHTS OF HUMANS AND COMPUTERS OVER AUTHORSHIP OF SOFTWARE SIGNED BY MOST WORLD NATIONS

2010 - FIRST PORTABLE BIOCHIP INTERFACE COMPUTER MODEL IS DEMONSTRATED

SOURCES: NEXT, JUNE 1981 AND OMNI: THE FUTURE ALMANAC, 1982

JOBS TO BE OUTMODED BY HIGH TECHNOLOGY

FACTORY AND MANUFACTURING RELATED

MACHINISTS (LATHE, MILLING, GRINDING, STAMPING)
FINISHING (DEBURRING, SPRAYING, POLISHING)
INVENTORY (LONGSHOREMAN, WAREHOUSEMAN, INVENTORY CLERICAL)
FITTERS, RIVETERS, CUTTERS
MACHINE LOADERS AND PARTS HANDLERS
PACKERS

OFFICE RELATED JOBS

TYPIST AND STANDARD SECRETARY (EXCLUSIVE OF EXECUTIVE SECRETARY)
MAILROOM PERSONNEL
ART ROOM STAFF (PASTE-UP, LETTERER, GRAPH MAKER, DRAFTSMAN)
FILE CLERKS
"PAPER" LIBRARIANS

MISCELLANEOUS JOBS AND CAREERS

SMALL FARMERS
CONVENIENCE STORES (DRY CLEANING, GENERAL STORE, SMALL REAL ESTATE BROKER)
NEWSPAPER WORKERS AND DELIVERERS
DOOR-TO-DOOR SALESPEOPLE
TOLL AND TICKET BOOTH OPERATORS
BANK CLERKS
TRADITIONAL TELEPHONE OPERATORS

End To Mandatory Retirement Supported

Associated Press

WASHINGTON

The Reagan administration reaffirmed its support Wednesday for the elimination of the mandatory retirement age but rejected proposals to protect people over 70 from discrimination in hiring and promotion.

"Not all, but some companies make investments in new employees which must be amortized over long periods of time," Labor Undersecretary Malcom R. Lovell Jr. told the Senate Labor subcommittee on labor. "They don't have that time when they hire (people) over 70 years of age."

But Lovell said the administration supports legislation to eliminate the mandatory retirement age.

The administration, in a report to Congress next month, will recommend a review of other statutory provisions affecting the elderly, he said.

"There are a number of other provisions in various laws that have a significant impact on retirement policy, especially relating to business and to the decision of elderly persons to retire," he said.

"These provisions would include issues such as pension accrual, liquidated damages, jury trials, hiring and promotion," said Lovell. "We believe that Congress needs to carefully review these provisions as part of the coming effort to set a coherent national retirement policy for the end of the century and beyond."

One of the strongest congressional fighters for the elderly, 81-year-old Rep. Claude Pepper, D-Fla., has been seeking an absolute ban on age discrimination. But he said he is now willing to forego the hiring and promotion protections if opponents, primarily business organizations, promise not to try to weaken the current law.

Pepper, chief sponsor of the legislation in the House, said he specifically is opposed to the elimination of jury trials by aggrieved workers and abolishment of double damages for back pay.

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DROPOUTS DECLINING

Lack of jobs across USA keeping teens in school

By Carolyn Pesce
USA TODAY

USA Today
2/8/83

More teens are staying in high school these days — a positive result of the job shortage.

"There's no question the economy is helping keep kids in school," said Illinois' Charles Ploszek, superintendent of a Cook County district.

That state recorded a dropout rate of 5.67 percent, or 34,669 students, in the 1981-82 school year, the lowest rate since 1975-76, according to the National Center for Education Statistics in Washington, D.C.

Other cities and states across the USA have similar declines:

- In Atlanta, dropouts in 1982 hit 4.4 percent, compared to 5.2 percent in 1981.
- In Pittsburgh, the dropout rate went from 8.6 percent in 1981 to 8.3 percent last year.
- In Portland, Ore., the rate went from 9 percent in 1981 to 7.1 percent last year.
- In Colorado last year, the dropout rate was 8.3 percent. It was almost 10 percent in 1978.

"There's an increased awareness among high school students that there's a tougher employment market out there," said Wesley Apker of the Colorado Association of School Executives.

School officials also attribute some of the decline to programs they've begun to convince kids to stay in school.

- In Los Angeles, classrooms set up in neighborhood stores provide students with more personalized instruction in a non-school setting.
- In Miami, school districts start counseling students in the seventh grade about career possibilities.

A national meeting of high school educators in Dallas today will focus on counseling for the roughly 5 million students a year who drop out.

11 Million Jobless —Who Hurts Most

The nation's newest unemployment report—a 41-year high of 10.4 percent in October—masked even higher jobless rates for some types of workers.

The Labor Department reported nearly 1 of 4 construction workers out of a job. Also idle: 1 of every 5 black workers and nearly 1 of every 6 members of Michigan's labor force.

In all, 11,551,000 persons were seeking work—2,882,000 more than a year earlier. The Labor Department gave this comparison of jobless rates for October, 1981 and 1982—

USN & WR
12/21/82

	1981	1982
By Category		
All workers	8.0%	10.4%
Adult men	6.7%	9.8%
Adult women	7.0%	8.6%
White	7.0%	9.3%
Black	16.8%	20.2%
Hispanic	10.7%	15.2%
White teenagers	17.7%	21.7%
Black teenagers	45.6%	46.7%
By Industry		
Construction	17.6%	23.0%
Manufacturing	8.6%	14.1%
Farm employes	13.4%	12.6%
Trade	8.4%	10.3%
Transportation	4.8%	8.1%
Finance	6.2%	7.1%
Government	4.7%	4.8%
In 10 Large States		
Michigan	12.7%	16.1%
Ohio	10.6%	13.8%
Illinois	8.5%	12.3%
Pennsylvania	8.7%	11.5%
California	8.1%	10.7%
New York	7.1%	9.4%
New Jersey	7.1%	9.1%
Florida	7.3%	8.7%
Texas	5.2%	8.3%
Massachusetts	7.4%	7.7%

THE FUTURE OF ROBOTS

ROBOT SALES (U.S. MANUFACTURERS)

YEAR	UNITS SHIPPED	VALUE (MIL)	NUMBER IN USE
1982	6,300	$ 315	11,300
1984	15,950	$ 638	37,250
1987	34,950	$ 874	115,200
1990	125,400	$2,132	359,200
1992	274,000	$4,110	810,000

SOURCE: INTERNATIONAL RESOURCE DEVELOPMENT, INC.

16-A The State/Columbia, S.C., Sunday, April 18, 1982

Worker Shortage Foreseen By 1990

United Press International

CHICAGO — A manpower expert predicted Saturday the declining birth rate will produce a worker shortage by 1990, relegating unemployment and discrimination against women and minorities to the problems of history.

Mary Coeli Meyer, a consultant on human resource and manpower systems, said in an interview the pool of Americans available to work will be drastically reduced, which will force industry to bring in "guest workers" to do menial jobs.

Actions taken by the various Washington administrations will have little or no bearing on the situation, she said.

"The decline in the birth rate — there is going to be a shortage of people," she said. "You're going to have a one-for-two replacement factor by 1990."

The currently nearly 10 percent unemployment rate is just a temporary phenomenon, she said.

"I'm not worried about the unemployed at the moment," she said. "I feel for them but it's just temporary.

"They're divided into three categories: You've got the unemployed due to the economic state we're in; you've got the dropouts — they looked for a job and couldn't find one so they dropped out; and you've got the hardcore unemployed, which is a different category entirely.

"When you talk about the labor shortage, you're not talking about those unemployed because of the economy. They will be sucked up quickly," she said, adding those who will have to be drawn into the system belong to the other two groups.

"One of the problems we've got now is poor manpower planning. We load up now, produce all we can and when we overproduce we wind up in a recession because we never plan a balanced system where input equals output. It's very shortsighted."

Ms. Meyer, president of the consulting firm Cheshire Ltd., said the labor shortage will force industry to practice long-term planning and retrain workers who have been displaced by technology and other problems.

"Technology has gone as far as it can go without considering the human factor," she said. "You can only mechanize and computerize things to a given point without considering the human being before putting the human back into the equation to get the product out."

The labor shortage, however, is going to force a return to creativity and planning and the competition for manpower is going to increase the individual's level of job satisfaction because industry is going to be forced to cater to its workers, she said.

Fastest-growing trade occupations

The USA's job market is becoming more technical oriented, often requiring workers to have complex skills — but not necessarily advanced educations — to compete. Here is a list of the fastest-growing occupations that require training but not a college degree:

Occupation	1980 Employment (thousands)	Projected Employment Increase '80-'90
Paralegals	32	109%
Computer mechanics	83	93
Computer operators	185	72
Office machine servicers	55	60
Tax preparers	31	49
Personnel recruiters	58	47
EDP equipment operators	49	44
Travel agents	52	43
Claims agents	40	43
Brick masons	146	40
Nurses	104	40

Source: Bureau of Labor Statistics

USA Today 2/7/83

South's workers slightly happier

Special for USA TODAY

Americans enjoy their jobs less today but find more happiness at work in the South, university researchers said Thursday.

"Now more people seem to think their job is important because it enables them to buy something," said Charles N. Weaver, of St. Mary's University in San Antonio.

In areas outside the South, 33.8 percent of the workers said they enjoyed their jobs, down from 48.3 percent 25 years ago.

In the South, 39.6 percent of the workers said they enjoyed their work, down from 58.7 percent in 1955.

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APPENDIX B: Round Two Delphi Questionnaire

Utopia County Community College

EDUCATIONAL QUEST SURVEY

Round II of the Delphi

INTRODUCTION

One of the principal difficulties with conventional forecasting methods is that they are generally incapable of detecting unprecedented future events (e.g. surprises). Methods that attempt to identify potential surprise events provide decision-makers with the opportunity to explore the implications of alternative visions of the future and to initiate appropriate strategies in anticipation of those futures. In other words, such methods provide those involved in planning to create futures that happen for the organization and not just responses to futures that happen to the organization.

The purpose of this questionnaire is to identify and assess those potential developments which could affect the future of Utopia County Community College. Specifically, this questionnaire is designed to elicit your judgements on the critical trends and future events that could have importance to the college's future. The time horizon is the next 12 years (i.e. present to 1995). Although none of us can tell precisely the future that will materialize over the next 12 years, each of us has a reasonably clear idea of the "most likely future." It is this image of the future that typically guides our decisions on long-term issues. Please keep this image of the "most likely future" in mind as you make your forecasts for the future in this questionnaire. It is a reflection of your expectations, not your preferences.

The questionnaire is divided into two parts. The first part is an evaluation of the importance for the college's future of emerging trends. The second part is an evaluation of potential events which also may affect UCCC's future.

Move quickly through the questionnaire. Do not labor over any single answer. Your first impression is likely to be your best.

Part I - EVALUATION OF KEY TRENDS

In this section of the questionnaire you are being asked to evaluate the consequences on the college of trends should they materialize. Please estimate the consequences for UCCC of each trend on the assumption that your forecast actually materializes. Use the scale of 0 to 10 in making your estimates.

0 = No Consequences
3 = Minor Consequences
5 = Moderate Consequences
7 = Major Consequences
10 = Revolutionary Consequences

The following example illustrates a typical response. In the example, the respondent estimated that the trend would have moderate consequences (5).

EXAMPLE

TREND	CONSEQUENCES IF FORECAST ACTUALLY MATERIALIZED
The percentage of women entering the Army increases by 5% annually.	5

This part of the trend section is designed for you to spend an average 30 seconds per trend. Once you have completed your estimates of consequences for all trends, please proceed to Part II.

Part I - Evaluation of Key Trends

TREND	CONSEQUENCES IF FORECAST ACTUALLY MATERIALIZED
T-1. The use of computers in business and education grows by 30 percent.	
T-2. Industrial automation doubles.	
T-3. Forty percent of state's industries now use computers with optical memory devices and user-friendly software.	
T-4. Forty percent of local service area homes have mocrocomputers.	
T-5. The number of industries using robots is now 50 percent.	
T-6. Seventy percent of all U.S. households have a personal computer.	
T-7. Due in large part to the increasing median age of American public, health care because a major growth industry.	
T-8. The rate of women entering the job market has increased by 20 percent.	
T-9. The portion of the U.S. population aged 18-22 has declined.	
T-10. The average age of students in technical education is now 30.	
T-11. The decline of the small family farm continues.	
T-12. The number of students who are dependent upon financial aid has increased by 10 percent.	
T-13. The rate of industrial development and expansion in the state increases annually by 5 to 10 percent.	
T-14. The percentage of the federal budget spent on national defense has increased.	

TREND	CONSEQUENCES IF FORECAST ACTUALLY MATERIALIZED
T-15. The movement of industry from the Frosebelt to the Sunbelt is continuing at approximately the same rate as that of the 1970's.	
T-16. A singificant portion of persons attending American colleges are not enrolled in a formal program of study but simply "take a course."	
T-17. The annual unemployment rate of minority youth has continued to remain more than double that of white youth.	
T-18. The enrollment of adults in re-training programs offered through continuing education increases.	
T-19. Funds from Job Training Partnership Act account for 33 percent to 40 percent of annual revenue in the state's two-year colleges.	
T-20. There is an increased number of educational programs in environmental technology.	
T-21. The "hands-on" dimension of instructional programs in high-tech fields assume even greater importance than in the early 1980's.	
T-22. Larger numbers of unemployed adult students with poor learning/thinking/communications skills enter the college for retraining.	
T-23. The growth of the fast-food industry creates additional demands for persons trained in the basic technical skills needed by this industry.	
T-24. There is a growing need for formal training in small business management that has resulted from the increased interest of the American public in entrepreneurship.	
T-25. Community college have experienced declining political support.	

TREND	CONSEQUENCES IF FORECAST ACTUALLY MATERIALIZED
T-26. Pressure for accountability in higher education has increased.	
T-27. The educational level of students entering the state's two-year colleges has increased.	
T-28. Costs for upgrading instructional equipment have increased significantly over the levels of 1980.	
T-29. Increased local requirements coupled with growing state-level demands please additional burdens on support staff at UCCC.	
T-30. A reduced level of federal commitment to education is manifested by the decreased support to states and counties and a decline in the number of federal grants available.	
T-31. A larger portion of industrial employees is being trained on-site by their companies.	
T-32. The number of vocational program offered by public secondary education is reduced.	
T-33. State funding to provide for new faculty positions and for professional development of existing faculty has increased by 30 percent.	
T-34. Enrollments in industrial craft programs (auto-mechanics, construction, etc.) have declined by 35 percent.	
T-35. More than 60 percent of evening students in technical colleges are enrolling on a part-time basis.	
T-36. Some 75 percent of technical education students are taking at least one developmental course.	

TREND	CONSEQUENCES IF FORECAST ACTUALLY MATERIALIZED
T-37. Thirty-five percent of high school graduates do not meet state standards (as defined in the Educational Improvement Act of 1984) to qualify for admission to a four-year college.	
T-38. Skills training becomes increasingly job-specific.	
T-39. Unmeployment in the textile industry reaches 20 percent.	
T-40. Most entry-level jobs require a higher skill level and, consequently, more educational preparation than in 1980.	
T-41. The need for electronic technicians to maintain high-tech equipment has grown by 20 percent.	
T-42. Business and industry spend 20 percent more for training and re-training.	
T-43. The majority of new jobs being created are now in the service industries.	
T-44. Job demand for highly specialized technological workers expands.	
T-45. Persons employed in the manufacturing section represent a shrinking percentage of the U.S. labor force.	
T-46. The expanding "service economy" results in large numbers of lower-skill jobs, such as clerks and food-handlers.	
T-47. Employment in retrain businesses, such as major department stores, requires increasing levels of specialization, in purchasing, marketing, management, and other relevant areas.	
T-48. The purplus of college graduates overqualified for available jobs has increased approximately tenfold.	

Part II - EVALUATION OF FUTURE EVENTS

The second part of the questionnaire requires you to provide two judgments about each event listed. The first judgment concerns the probability of each event occurring during the period of 1987 to 1997. In the column labeled "PROBABILITY ... etc.," write in a numerical estimate of how likely the event is to occur in this ten-year period. Use a percentage figure between 0 percent (no likelihood of occurring) to 100 percent (certain to occur).

The second judgment concerns the impacts of each event should it occur on community colleges in our state. In the column headed "IMPACT ... etc.," enter the numbers that indicate your estimate as to the impact. Use the scale of 0 to 10 in making your estimate.

0 = No Impact
3 = Minor Impact
5 = Moderate Impact
7 = Major Impact
10 = Revolutionary Impact

The following example illustrates a typical response. The respondent estimated that the trend would have a low probability of occurring (.25) and a major impact (7).

EVENT	PROBABILITY OF OCCURRING BETWEEN PRESENT TO 1995	IMPACT IF EVENT OCCURS
Federal government places trade restrictions on all foreign textile imports.	.25	7

This part of the questionnaire is designed for you to spend on an average of 60 seconds per event.

Part II - Evaluation of Future Events

EVENT	PROBABILITY OF OCCURRING BETWEEN PRESENT to 1995	IMPACT IF EVENT OCCURS
E-1. All industrial drafting is done with CAD equipment.		
E-2. Thirty-five percent of medical analysis and diagnosis is done by technologists, using computerized processes.		
E-3. Eighty percent of production machinery operated by numerical and computer controls.		
E-4. A composite developed from carbon-based fibers becomes a viable raw material for construction of airplanes and automobiles.		
E-5. The automation of offices continues at the same rate as that of early 1980's.		
E-6. The first factory in space is operational.		
E-7. Electric typewriters are completely replaced by electronic typewriters.		
E-8. The proportion of older students (35 and above) seeking to upgrade their skills by entering post-secondary education reaches 65 percent.		
E-9. Comprehensive federal legislation designed to reindustrialize the nation, and including support for technical education programs has been passed by Congress.		
E-10. An amendment to the U.S. Constitution limiting growth of the federal budget to a specific percentage of the GNP has been approved.		

Part II - Evaluation of Future Events

EVENT	PROBABILITY OF OCCURRING BETWEEN PRESENT to 1995	IMPACT IF EVENT OCCURS
E-11. The American textile industry has dramatically diversified its product line in the face of continuing depression of its traditional products.		
E-12. The only economic expansion that occurs in the UCCC area is in the service industries.		
E-13. High interest rates and tight money continue to stifle growth in the home building/buying market, leaving apartment investments as the single bright spot in the housing industry.		
E-14. As more and more labor-intensive industries move to foreign countries, the region is not as effective in attracting industry as in the 1970's and early 1980's.		
E-15. The heightened manufacturing capability of developing countries in the areas of textiles, steel, and auto manufacturing presents increasingly stiff conpetition to a variety of American industries.		
E-16. Many industries reduce or eliminate financial incentive programs for employees to continue their education.		
E-17. The two-year colleges in the state continue to experience difficulty in securing adequate financial support from state and county givernments.		
E-18. Government regulation of the health industry.		
E-19. A regional compact system for disposal of low-level nuclear waste is adopted, reducing the volume of such wastes stored in the state by more than two thirds.		

Part II - Evaluation of Future Events

EVENT	PROBABILITY OF OCCURRING BETWEEN PRESENT to 1995	IMPACT IF EVENT OCCURS
E-20. The concept of malpractice is now applied to all professions including teaching.		
E-21. A major Fortune 500 company signs a contract with the state to implement a statewide computer literacy program to benefit unemployed citizens.		
E-22. The federal government reduces by nearly a third its level of funding for student financial aid programs.		
E-23. All Trio programs suffer funding cuts, while higher percentages of matching funds are required.		
E-24. Improving relations between two-year and four-year colleges has led to a better transfer environment.		
E-25. Communications satellites become more economically feasible, resulting in new opportunities for teleconferencing and other alternative forms of educational delivery systems.		
E-26. Quality educational programs versus access to them is the dominant issue for two-year colleges.		
E-27. The direction of technical education in the state has changed from the two-year college to basic job training and short-term programs.		
E-28. Area vocational centers, two-year colleges and four-year colleges find themselves forced to articulate more effectively.		

Part II - Evaluation of Future Events

EVENT	PROBABILITY OF OCCURRING BETWEEN PRESENT to 1995	IMPACT IF EVENT OCCURS
E-29. Industry increasingly calls upon the two-year colleges of the state to provide more and better occupational upgrading for employees as technology continues to change.		
E-30. The competition for students increases as two-year colleges, four-year colleges, the armed forces, and private enterprise go "head to head."		
E-31. The higher costs of construction, plant operations (utilities), educational support services (computer, instructor salaries, and supplies) are placing major financial strains on educaitonal institution.		
E-32. A new GI Bill with increased educational benefits and including a package for reservists is passed and approved by the administration.		
E-33. There is a revival of public interest in liberal arts education.		
E-34. May four-year colleges in the state have enhanced their reputations for academic excellence.		
E-35. Many two-year colleges continue to rely heavily on part-time instructors.		
E-36. Two-year colleges offer the baccalaureate degree.		
E-37. Technological changes are requiring continuing changes in many existing technical education curriculums and the addition of several new ones.		

Part II - Evaluation of Future Events

EVENT	PROBABILITY OF OCCURRING BETWEEN PRESENT to 1995	IMPACT IF EVENT OCCURS
E-38. The state's commission on higher education has issued a decision prohibiting unnecessary duplication of programs.		
E-39. Management of the technical education system has become increasingly centralized at the state level, thereby reducing by some 30 percent the autonomy and flexibility enjoyed by individual colleges in the 1970's and early 1980's.		
E-40. Teaching machines are now being used in schools and colleges that can respond to both a student's answer and physiologic response.		
E-41. Sixty percent of the workforce in all sections of the country have flexible (and reduced) work schedules.		

APPENDIX C: Scenarios of the Future

The Official Future

The period of 1985 to 1990 can be characterized as a "boom time" for Utopia County Community College.

A long-standing emphasis by the college upon high-technology training paid big dividends as the job market expanded vigorously for persons equipped with computer skills and those prepared for work in automated plants and offices. The use of computers in business and education grew by some 30 percent, contrasted with the early 80's. Likewise, at least 7 out or every 10 homes in America were equipped with appliances and other equipment that in some way utilized a computer. The need for technicians to service this equipment grew at a steady pace.

The same expansion occurred in the health care field as area hospitals increasingly relied upon UCCC to provide them with technologists able to operate the sophisticated diagnostic equipment that was developed in the late 1980's. Entrepreneurial training offered by the college also continued to find wide acceptance during this year.

Because of the relevance of its programs and its success in job placement, enrollment in UCCC grew markedly. Despite the reluctance of some legislators to enthusiastically support the college, UCCC met all tests of accountability and qualified for substantial funding under the state formula. At the same time, even a federal reduction in student financial aid worked to the college's advantage. Students who, with full financial aid support, might have gone to a four-year college or university now

enrolled at UCCC instead. The result was not only a gain in enrollment, but also an upward move in the academic level of the student body. Because of increases in state funding and student tuition revenues, the college was largely able to offset many of the declines in grant programs at the federal level. Likewise, more full-time faculty members were employed, thereby reversing a historic dependency upon a disproportionate number of adjunct faculty.

Another factor which favorably impacted UCCC was the considerable number of high school graduates who did not qualify for admission to a four-year college under the terms of the Educational Improvement Act of (1094). Many of those students elected UCCC, creating a boost in enrollment. Of greater importance, however, was the fact that this situation afforded leverage for UCCC to request authorization to offer A.A. and A.S. programs. Approval of these programs was granted and the initial classes were accepted for the fall of 1988.

In the meantime, an external condition which has plagued the community for some time tended to stabilize during the late 1980's and continued past 1990. The textile industry, which suffered greatly from a high volume of foreign imports, benefitted from trade restrictions imposed in 1986 and appeared to hold its own through the latter portion of the decade. This reversal had similar positive effects upon other industry in the area, thus creating an environment favorable to training and employment.

To summarize, the college flourished during the late 1980's and early 1990's.

The Surprise-Free Future

In the late 1980's and early 1990's Utopia County Community College maintained a position, in terms of credibility and effectiveness, similar to that which characterized it at the beginning of the 90's.

While job demands for highly specialized technological workers burgeoned around much of the country, this was offset to a substantial extent in the UCCC service area by a major reduction in industrial investment. The entire state, in fact, experienced an inability to attract new industry. At the same time, the service economy did not fully materialize in the region, at least not in terms of providing an abundance of high-tech job opportunities. The decline of the textile industry, which led to a 20 percent reduction in its work forces, did produce a number of adults seeking re-training. Many of these displaced workers, however, were not well prepared academically. They did not translate into significant enrollment gains and even fewer became graduates, although there were some notable success stories.

Beginning in the latter part of 1988 the textile industry began to experience some stability. This occurred in response to several factors, including: a. modernization of manufacturing processes within the industry; b. some diversification in

product lines; c. limited trade restrictions imposed by the federal government. With this improvement in textiles, other industries in the area rebounded as well. Still, there was no general return to a "golden age" for manufacturing industries like textiles.

The fiscal environment in which UCCC operated was one of on-going strain. Costs of construction, plant operations, and educational support services continued to escalate rapidly. Funding from all levels of government became increasingly difficult to secure. County support monies, typically in short supply, were even less plentiful as a result of ther industrial downturn and more agency competition for available dollars. The same situation applied to state funding, particularly the competition factor. A conservative fiscal mood still dominated much thinking at the federal level and, as a consequence, there was a significant reduction in grants to support special projects. There were even substantial reductions in student financial aid programs, although the impact of these cuts was felt more severely by those institutions charging higher student fees. In fact, the reductions in student aid were responsible for the enrollemnt of considerable numbers of students at UCCC--where students with more aid would have attended other institution.

There were a number of important "bright spots" for UCCC during this period. The college's commitment to high-technology training found a response in many industries where automated manufacturing processes were being introduced. Use of computers

in business and education grew markedly while computer-assisted devices of some kind were found in a majority of homes. The need for technician to operate and to service such equipment expanded steadily and UCCC provided graduates to meet this demand. Enrollment of students in high-tech degree programs increased sharply and the Continuing Education Division made major contributions providing necessary short-term training (and re-training) for industrial workers. Adults enrolling in such programs represented a growing segment of the college's student community, more than off-setting the declining pool of high school graduates.

Entrepreneurial training also remained an important strength of the college. The operation of small businesses grew throughout the area and UCCC assisted through its technical and continuing education services.

Because of these successes, UCCC was able to meet all tests of accountability, qualify for its share of available funds, and maintain its reputation for educational excellence.

The Technological Imperative

The continued spread of high technology throughout America's economy has contributed to the prominence technical education enjoys among the American people and policy-makers. Fueled by the advance made through ongoing researchers, American technology once again is in the position of world dominance.

Much of the reason for ths technological comeback can be traced to the breakthroughs made in computer technology and

artificial intelligence research during the late 1980's. The computer companies such as IBM, Apple, AT&T and DEC that survived the market "shakeout" of the mid 1980's quickly took advantage of their position to introduce major technological advances in optical memory and voice imput devices, microchip design and component miniaturization. More significant were the stride that were made in programming techniques and languages which created a boom in the development and marketing of software segments that were extremely user-friendly.

As a result of these strides in computer technology, the computerization of American business, industry and human services contiunued to grow beyond its 1980 level. The use of computers in these three areas grew by almost 30 percent during this period. Industrial automation has expanded at a rate of 5 percent annually. Almost all industrial drafting is now done with some form of CAD system. More and more of the machinery found in American plants is operated by numerical and computer control technology.

High technology has also changed the American office. Electric typewriters have been completely replaced by electronic typewriters and word processors. The automation of offices with such equipment has continued at the same steady rate as that of the early 1980's.

Another area impacted by the spread of the new technology of automation and computerization has been the human services. Technologists, using computerized processes are playing an increasingly central role in the medical analysis and diagnosis

of patients. Of all the human services, educatioin has been the one which has seen the most dramatic changes resulting from the use of computers. Computers, using new forms of software developed by cognitive scientists, are approaching a level of sophistication at which they may truly become teacher surrogates. Teaching machines are now being used in schools and colleges that can respond to both a student's answer and physiologic response.

The pervasiveness of the new technology within American society can also be seen outside the classroom, office, and factory. Data Resources, a market analysis firm specializing in the computer industry, estimates that over 50 percent of all United States households now have some form of computers. As the use of computers in homes, businesses and other areas of American life has continued to grow, the need for computer literacy has intensified. The curriculum of most high schools, two-year and four-year colleges reflect programs and courses designed to address this need.

The growing dependence of American on computers has had a major impact on technical education in two-year colleges across the country. Industry and business in the state have kept pace with other areas of the country in adopting the new technology. The number of industries using robots and other automated systems has incresed by 5 percent annually. Most entry-level jobs have required increasingly higher levels of computer literacy. The need within the state of electronic technicians to maintain high-tech equipment has grown at an annual pace of 3 percent.

These technological changes are requiring many of the state's

technical colleges to continually revise many of their existing technical education curriculums and create new ones. The state's industry increasingly has called upon the technical colleges of the state to provide more and better occupational upgrading for employees and persons entering the labor force as the technology continues to change.

The continued heightened interest in technical education has been a mixed blessing for two-year colleges. Program enrollments, rather than declining as predicted, have stabilized because of the increased number of adults interested in "retooling" their occupational skills. The interest in the technical education services offered by UCCC, among the state's young people, continues to remian high due to recent reductions in the nunber of vocational/occupational programs offered by the state's public secondary schools. The need to keep UCCC's staff abreast of the changes in the technology has prompted state policy-makers to provide increased state funds for professional development of existing faculty. In addition, after a period of a "no hiring" policy in regards to new personnel, limited funds are now available to staff new faculty positions.

However, the pattern of constant curriculum changes has placed a severe limitation on these efforts. The "hands-on" dimension of instructional programs in high tech fields assumes even greater importance than in the early 1980's. Moreover, the costs of upgrading instructional equipment have increased significantly over the levels of 1980. College administrators cite the difficulty of finding adequate monies to purchase state-of-the-art laboratory equipment.

All in all, however, the period since 1985 has been one of growth in the state's two-year college system. It has been one in which the public and the leaders of the state's economic development effort have looked to institutions like UCCC for leadership in maintaining the pace of business and industry in adapting to the ever changing imperatives of the new technology.

The Neoclassic Future

A number of crippling blows struck Utopia County Community College between 1985 and 1990. The ultimate effect was a complete change in the college's basic mission, with resultant accelerated decline in political support and diminished status in the community.

During 1985 a panel informally tagged the King Committee, appointed and strongly supported by the Governor, recommended that the two-year college system in the state shift its two-year post secondary/collegiate emphasis to that of a provider of short-term job skills training. The committee's proposal found support among a variety of "bedfellows," many with powerful self-interest motives. Included were leaders in four-year higher education and politicians and new media personnel who never accepted the state's two-year institutions as "colleges" in the first place. After a bitter fight, the State Legislature enacted, in May of 1986, a bill to implement the change.

Thus reduced, in efect, to a "trade school," UCCC officials attempted to make the most of their new circumstances. The

economic environment in which the college operated, however, remained in the same downward spiral that had begun in the early 1980's. Industrial activity was in a state of decline, with increasing worker lay-offs and outright closings in a number or existing operations. Unemployment in the textile industry alone hit 20 percent. There was little expansion and almost no opening of new plants in the institution's service area. While UCCC was challenged to provide different skills to the larger numbers of workers without jobs as a result of the economic stagnation, there was virtually no opportunity for placement of these workers in other industries. The much-heralded service economy had, at the same time, failed to produce the larger number of jobs that forecasters had predicted earlier. Even this sector, then, had little to offer to the larger numbers of adults with low literacy levels who had been displaced from their previous unskilled labor jobs.

In the meantime, because much of the responsibility for high-technology training has been transferred from the two-year colleges to other instutions, opportunities to educate individuals for some of the emerging job needs were now lost. This shift in responsibility occurred after UCCC had invested heavily in training programs designed to meet society's need for persons trained in automated manufacturing and computer technologies. Enrollment at the college entered a period of sharp decline in the fall of 1987 and has continued since that time.

Funding for UCCC reached a crisis of 1988. Difficulties in securing adequate fiscal support from all levels of government (local, state, and federal) intensified. The college, suffering from a deteriorating image and unable (because of the severe industrial/economic crisis in its area) to meet the prescribed accountability tests, adopted a posture of deep retrenchment.

The Economic Malaise

America's last ten years can best be characterized as a period of economic malaise. Many of the present difficulties can be traced back to the economic problems that emerged during the late 1970's. Although America appeared to be well on her way to solving these problems during the first half of the 1980's, all the economic indicators parallel those of 1982.

As with most economic problems, the causes of the present situation are complex and varied. However, there is general consensus among most people that America's inability to solve the problem of a growing national debt is one of several major contributing factors. Another factor frequently cited by both the man in the street and the knowledgeable observer is the inability of America's industry to compete with that of foreign countries. The heightened manufacturing capability of foreign countries in such basic industries as textiles, steel and auto-manufacturing presents ever increasing competition to a variety of American industries. Although Congress has periodically revised the Unites States' trade policy, the federal government never succesfully restricted foreign imports to the level of the early 1970's.

The results of this policy failure is particularly apparent in the area of textiles. The number of plant closings and employee lay-offs is testimony to the continued difficulty American textile manufacturers are having with foreign textile imports. Unemployment in the textile industry has reached almost 20 percent. Also, the attractiveness of cheap foreign labor has caused more and more labor-intensive industries from America's frostbelt to relocate their plants in foreign countries and not in sunbelt states. Consequently, the economic development activities in southern states have not been successful in expanding the state's industrial base to offset any contractions in its job market. Consequently, many southern states find themselves with large numbers of unemployed adults who are not able to find new jobs in a static economy. Equally significant, many of these individuals are not trained to adequately function in the present economy.

Since the mid 1980's, state policy has encouraged these dislocated workers to retrain themselves. The state's system of two-year colleges has been a major vehicle for such retraining. The enrollment of adults in retraining programs has been and continues to be an expanding segment of the continuing education market of these colleges. More than 60 percent of the evening students enrolled in two-year colleges are enrolled on a part-time basis. Significant numbers of those who are unemployed adult students enter the college for retraining with poor learning, reasoning, and communications skills. The needs of these students along with those of the students who traditionally

have enrolled in UCCC's programs have placed severe strain on such support services as counseling and developmental education. A recent survey of the state's two-year colleges reveal that 3 out of every 4 students are taking at least one developmental course.

The new economic realities have also affected UCCC in a number of other ways. State revenues have been reduced because of the decline in the state's textile industry and its ineffectiveness in attracting new industry as in the 1970's and 1980's. Consequently, the two-year colleges of the state have continued to experience difficulty in securing adequate financial support from state and county governments. This difficulty is felt even more acutely now that the colleges are having to face the task of providing retraining to significant numbers of the unemployed. Although Job Training Partnership Act funds are available to support programs for this group of students, many colleges find themselves in a position of fiscal dependency on these funds. Funds from JTPA now account from 33 percent to over 40 percent of the annual revenue in the state's two-year colleges.

The continued economic problem of the state, both in terms of the need for massive retraining efforts among its residents and the decline in state revenues, has resulted in more centralization of control over technical education at the state level. Area vocational centers, two-year colleges and four-year colleges find themselves forced to articulate more effectively. The management autonomy and flexibility once enjoyed by individual colleges ha een greatly reduced by state governing

boards. The state's Commision of Higher Education has issued a policy prohibiting "...the unnecessary duplication of programs."

Overall, the period from 1985 to 1995 has been one that is not remembered by the staff of two-year colleges with fondness. A UCCC staff member described it best as a time when "...they wanted us to keep out the ocean, but the state could only afford to give us a tea cup and spoon to bail with."

APPENDIX D: Biographical Sketches

James L. Morrison
Professor of Education
The University of North
Carolina at Chapel Hill
Chapel Hill, NC 27514
(919) 966-1354

James L. Morrison, Professor of Education, the University of North Carolina at Chapel Hill, received his PhD at the Florida State University in 1969. He was lecturer in sociology at the University of Maryland, European Division (1964-65), instructor in sociology at the Florida State University (1968-69), and assistant professor of education and sociology at the Pennsylvania State University (1969-73). He served two terms as a member of the Board of Directors, Association for the Study of Higher Education, chaired the special interest group on futures research, the American Educational Research Association, chaired the editoral board, The Review of Higher Education and served as consulting editor of The Review of Educational Research and The American Educational Research Journal. He currently serves as vice president (Division J--Postsecondary Education), the American Educational Research Association and as convener of the Forum on Environmental Scanning, The American Association for Higher Education. Co-editor of Applying Methods and Techniques of Futures Research (Josey-Bass, 1983) and co-author of Futures Research and the Strategic Planning Process (Association for the Study of Higher Education, 1984), his research and writing activities focus on using futures research methods in educational planning and policy analysis. His consulting activities focus on assisting colleges and universities in developing environmental scanning systems to augment their long range planning processes.

Thomas V. Mecca
Vice-President for
Planning and Development
Piedmont Technical College
Greenwood, South Carolina
(803) 223-9317

Thomas V. Mecca, is Vice-President for Planning and Development at Piedmont Technical College in Greenwood, South Carolina. He completed his undergraduate and graduate studies in education and social science at the State University of New York and is currently a candidate for the Ed.D. in higher education administration at the University of South Carolina. He was Coordinator of Foreign Student Advisement at Sullivan County Community College (1967-1968), a member of the administrative staff of Tompkins-Cortland Community College, where he served as Director of Admissions and Registrar, Associate Dean for Continuing Educatin and Curriculum, Executive Assistant to the President and Director of Executive Management Services (1968-1981). He is President of the Institute for Future Systems Research, Inc., and an Adjunct Professor at the Graduate School of Management, Lesley College, where he teaches a course in forecasting emerging socio-political issues. He has co-authored articles on the future of occupational education and the use of environment scanning in the field of education for the World Future Society. Co-editor of Trend Digest, his professional interests focus on the use of such future research techniques as socio-political forecasting, and interactive computer simulation in strategic policy analysis. His consulting activities focus on assisting educational and other public service agencies in using future research techniques in institutional decision-making and long-range planning and in developing alternative sources of institutional funding.

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